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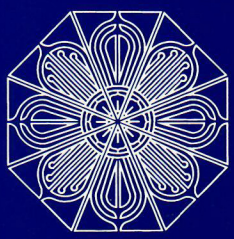
Consonant Lenition in Korean and the Macro-Altaic Question

Samuel E. Martin



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Samuel E. Martin

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To the memory of Robert Austerlitz

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Consonant Lenition in Korean and the Macro-Altaic Question

1. The lenition hypothesis

1.0. This study describes a diachronic change of the obstruent consonants in the central area of Korea, with attention both to ONSET lenition, whereby the initial consonant of a morpheme is weakened, and to CODA lenition, whereby the final consonant of a morpheme is weakened, with particular focus on the latter as exemplified by certain types of verb stem. Also addressed are the possible implications for the question of whether Korean is genetically related to certain other languages, specifically those grouped under the name Altaic. Much of the meat of the argument (and some of the gristle) will be found in the endnotes, but the body of the text can be read independently.[1]

1.1. Korean grammarians speak of three anomalous conjugations, calling them the **p**-irregular verbs, the **s**-irregular verbs, and the **t**-irregular verbs.[2] These three conjugations are similar in a number of ways, including accentual behavior. Seoul speech has lost the pitch accent system of Middle Korean but partially retains the old category of Low-High (= rising) pitch as vowel length, especially in the verb forms to be discussed. The accent alternations, which appear in Middle Korean as initial Low pitch versus Rise, are correlated with segmental alternations in the three conjugations. A Middle Korean verb stem of the first type has a final voiceless stop ***p*** before a consonant but the voiced fricative ***W*** = [*β*] before a vowel; a stem of the second type has a final voiceless sibilant ***s*** (which later merged with ***t*** as [t]) before a consonant) but the voiced sibilant ***z*** before a vowel.[3] Stems of the third type end in a final ***t*** before a consonant, and that final consonant was pronounced as a voiceless stop just like that of regular stems that end in ***t***, but before a vowel the stem ended with a flap [r] = /l/. The symbolization of the phoneme with "l" rather than "r" is somewhat arbitrary but follows the current practice. The phoneme has two major allophones, the flap when it is before a vowel or semivowel, and a lateral elsewhere, i.e. before a juncture or a consonant (including **-ll-**).

The stops of modern Korean /p t k/ are voiced [b d g] between the phonemes that are typically voiced (vowels, semivowels, resonants) but are voiceless elsewhere, and I assume that the articulation of the simple consonants was much the same in the 15th century when the Hankul writing system was invented. The sibilant /s/ is normally unvoiced in modern Korean, but there is evidence for a voiced version [z] between

typically voiced phonemes in certain northern dialects, especially in earlier times. In the language of the central area of 15th-century Korea the voiced sibilant /z/ was a distinct phoneme, so that /s/ itself must surely have been voiceless in all environments.[4] The intervocalic *-W-*, a voiced labial fricative, was also a distinct phoneme that contrasted with ***p***. Where Middle Korean wrote *-z-* and *-W-* the modern dialects either show /s/ and /p/, undistinguished from the regular phonemes, or, like Seoul, they have elided the *-z-* and have further reduced *-W-* when it is before a vowel to the semivowel -w-, with which a following **u** [ɨ] will blend to yield **wu** [u].

As stated in Martin 1992, I think that all cases of *-W-* and *-z-* are the result of leniting /p/ and /s/. The flap [r] of the alternation of /t/ with /l/ in the t-irregular verbs was not a distinct phoneme in Middle Korean; it was an allophone of /l/, as it is in modern Korean. When, as below, we write the t-irregular stems as *...T-* the capital ***T*** represents a morphophoneme, unlike the capital ***W*** of the *...W-* stems or the ***z*** of the *...z-* stems, which were distinct phonemes in Middle Korean, here defined as the central dialect of the 1400s and the early 1500s. Middle Korean also had a voiced fricative *-G-*, velar or perhaps laryngeal, that mostly goes back to a basic ***k*** but in certain words to a ***p***. For more details on the limited distribution and the peculiar notation of this phoneme see Martin 1992:53-4, 508.

1.2. The position that is taken here can be called the LENITION HYPOTHESIS. A revised version of the hypothesis, first mentioned in Ramsey 1979 and well argued by Ramsey 1991, holds that proto-Korean had a set of intervocalic voiced obstruents **-b- *-z- *-g-*, from which the Middle Korean phonemes *-W-*, *-z-*, and *-G-* descended. That version of the hypothesis is extended to include a *-d-* for the source of the morphophoneme ***T***, as described below. (Starostin 1991:123 n.32 also treats ***T*** as ****d***.) In my opinion there is no need for these extra consonants in proto-Korean when all the facts are taken into account, but it remains an interesting idea and is particularly attractive to those seeking to tie Korean verb stems to the proto-Altaic reconstructions proposed by Poppe and others, though Ramsey wisely sticks to internal evidence. Impressed with the statistical imbalance of accentual types in the lexicon and their partial complementarity in shape, he has sought to eliminate distinctive accent from proto-Korean and he postulates the additional set of obstruents to help do so. I find no need for the extra set of medial obstruents in proto-Korean, despite Ramsey's perceptive observations on the distribution of shape types. I describe the lenition

as predictable for verbs in the environment *... *'C¼o-*, as in Ramsey 1975. That enables us to explain the development of the Low-High rising accent not only for stems that appear to end with a leniting consonant but also for those that appear to end in resonants, here treated as having a final minimal vowel in their basic forms, like the stems with leniting obstruents. Ramsey 1991 would have the resonants grouped with his newly postulated set of obstruents because they share the feature VOICING, but let us note that the feature is determined for the resonants (as it is for the vowels) while for the new set of internal obstruents that he proposes it would be distinctive. We do not know whether the Middle Korean obstruents were nondistinctively voiced when they came between typically voiced phonemes, but I see no reason to give up the belief that voicing has always been nondistinctive in Korean, as it is today.

Ramsey does not, to be sure, deny that many cases of Middle Korean *-W-*, *-z-*, *-G-*, and *-l-* are the result of the lenition of *-p-*, *-s-*, *-k-* and *-t-*. He is concerned to account for the accentual behavior of stems ending in these consonants in Middle Korean, for which he had earlier proposed to reconstruct dissyllabic stems ending in a vowel with the default realization of *-¼o-*, the minimal vocalic quality; and, since the accent of the stems ending in *-m-* and *-n-* behaves the same way, these also are to be reconstructed with a final vowel. (For both types the final vowel of the stem was subject to apocope under the same conditions.) Earlier, he had proposed that the voiced fricatives were lenited from the simple obstruents, as we do here, but now he proposes that they lenited from a set of distinctively VOICED medial obstruents. The common feature for the accent class (and the apocope conditions) is that of voicing – treated as distinctive in the case of the obstruents, automatic in the case of the resonants. It should be noted that low pitch, which characterized this class (but was not exclusive to it), is a phonetic feature that is indeed frequently associated with voiced sounds, but in all the cases that have come to my attention it is INITIAL voicing that leads to the low pitch rather than final or medial voicing. The development of the Cantonese low register is the classic case. The phonetic argument, then, is questionable. Why not leave the voiced fricatives in the verb stems to be described as a weakening of the simple obstruents in the regular environment **CV'C¼o-*? The difference in accent behavior is then predictable depending on whether the stem ends in a vowel, with High pitch for the monosyllables and Low-High for the dissyllabic stems, including **CV'C[¼o]-*, or in a

consonant (*...p-*, *...t-*, *...k-*, *...c-*, *...s-*), with a default pitch that was Low. The pitch itself may appear to be phonetically unmotivated, but that is another matter, perhaps irrelevant to the distinctive features of proto-Korean, since that language probably did not use accent as a distinguishing characteristic of verb stems.

Does this mean there was no accent in proto-Korean? It is tempting to think so, yet there are many nouns that cannot be accounted for without assuming some sort of marking that will correspond to the accent distinctions of Middle Korean. An analogous situation is found in Japanese, where the verb stems can largely be accounted for as falling into two accent types, depending on the initial register, and it has been proposed that for one of these types (the low register) the distinctive feature was vowel length. But for the Japanese nouns there remain accent types which defy further explanation, so that some sort of marker must be assumed in addition to the two registers (or vowel length distinctions), even though it was not relevant to the verb stems.

Ramsey now proposes that those verb stems which later end in simple obstruents (*...p-*, *...t-*, *...c-*, *...s-*, *...k-*) also were dissyllabic, the final weak vowel suffering apocope under the same circumstances as the lenited stems. If so, then there would be no phonetic motivation for the latter group to undergo weakening when the former, of similar shape, failed to do so. Accordingly, Ramsey concludes that the voiced fricatives lenited from sounds DIFFERENT from the simple obstruents. He does not necessarily assume that the SIMPLE obstruents were voiceless in proto-Korean or that the ancestors of *...W-*, *...T-* (*t/l*), and *...G-* were the voiced stops [b], [d], and [g], for he refers to them only as "voiced obstruents", and that could mean [β], flap [r] (which is momentarily obstruent), and [γ]. (It is unclear whether the proto *...z-*, in some cases merging *...c...* and *...s...*, is regarded as fricative or affricate.) The resulting proto-Korean system leaves the verb stems all open-syllable (except for those ending in **...l-*?), with many dissyllabic stems that end in the weak vowel. This looks much like the Japanese patterns as viewed by Martin 1987, developed from ideas in Unger 1977,[5] who reconstructs the consonant-final stems of Old Japanese as proto-Japanese dissyllables ending, for the most part, in either an echo vowel or *a*. The Japanese final vowel, like the Korean weak vowel, was reanalyzed with the restructuring of the verb paradigms which took place by historic times. In the absence of etymological evidence for stronger values, these final vowels are subject to the suspicion that they may have been epenthetic in origin.

Unlike Korean, Japanese has only a few monosyllabic verb stems of the CV- type. Of one-syllable stems Middle Korean has 8 with the shape ***---a-***, 6 with the shape ***---e-***, 22 ***---i-***, 21 ***---u-***, 6 ***---wu-***, 26 ***---o-***, and 9 ***---wo-***. There are also 8 monosyllabic stems with the shape ***---ay-***, 21 ***---ey-***, 15 ***---uy-***, 13 ***---wuy-***, 18 ***---oy-***, and 13 ***---woy-***. With the exception of ***---uy-***, most of these stems are reduced from dissyllables of the shape ****---V(C)i-*** and in the compression they acquired a rising accent by blending Low + High.

Ramsey is concerned that treating his class 1 [Low] stems as closed monosyllables leaves unanswered the question why there were no final nasals in this class. The expected counterparts to class 2 [High] of the nasal-final stems are in Ramsey's class 6 [Low-High] and reanalyzed as dissyllabic stems; the number of stems is about equal in the two classes. Incidentally, why are there so few ***---n-*** stems to begin with? Were they derived from nouns? For example ***¨sin-/si˙n[ㅗ]-*** 'wear (shoes)' < ***˙sin*** 'shoe' (how come that High accent?), ***¨an- / a˙n[o]-*** 'embrace' < ***˙anh*** 'inside' (again the High accent); maybe both from an apheretic form of incorporated ***°ho- / ˙ho˙y-*** 'do/be'? The only other simple ***---n-*** stem that we have found is ***¨ten- / te˙n[u]-*** < ****te˙nu-*** 'wager, bet'. The stem ***munu-*** 'prolong it' (***mu˙ne*** 1485 Kwan 10a, ***munul*** 1518 Sohak-cho 9:50a, ***mu˙nwo˙m ol*** 1463/4 Yeng 2:108a) is to be treated as ***mun[u]-***, the expected shortening of ***munk- / *munu-*** (it is unclear how this stem is related to ***mun-kuu-*** = ***mon-kuzu-*** vi 'dawdle, hesitate'), just as ***nemu-*** 'pass over; disregard' (attested 1459) is an allomorph of ***nemk-/nemu-*** (the infinitive ***nem˙ke*** is attested in 1481 Twusi 7:35b) = ***namko-*** (see below) > ***nem˙kwㅗ-*** (from 1586). The ***---u-*** < ****---u-G-*** < ****---u-k-*** contains an allomorph of one of the bound auxiliaries that make causatives (Martin 1992:225), but it is uncertain just how the ***mun---*** is related to ***mul˙li-*** < ****mul[u]l-˙i-*** 'make/let one retreat or withdraw; delay, postpone', a causative from ***mulu- / mull-*** < ****mulul-*** 'retreat, withdraw'. Wmk sets up a stem ***namko-*** to account for the one attested form ***nam˙kanol*** (1481 Twusi 22:4b), presumably analyzing the form as ***namk-˙anol***. The LCT 1964 analysis ***nam-˙kanol*** put the form under the stem ***¨nam-*** but that left a problem, for the stem is not marked with the initial double dot as it is in the otherwise parallel case of ***¨namke˙na*** (1447 Sek 9:29a, 9:49a), so I think Wmk's treatment is correct. (The Low-High rising accent of a simplex stem was flattened to just low when a bound auxiliary was

attached.) I cite the stem as ***namk- / *namo-*** < ****namoG-*** < ****namok-*** 'pass over; leave it, let it remain' like ***tomk- / tomo-*** < ****tomoG-*** < ****tomo-k-*** 'soak it' (> **tamku-**). On these stems see Martin 1992:238-9 and 1982/3:8-9.

1.3. We will take a close look at how lenition affected the modern paradigms for the labials and the nasals, positing a set of ordered stages through time. Similar stages apply to a noun + a (quasi-free/ -bound) particle, but the noun has always enjoyed greater freedom than the verb stem, and for that reason the effect of the central-area lenition is more sporadic for the nouns. In the structures given below the processive bound auxiliary ***-(ˇ)no-*** may have been ***ˇna-*** up to Stage 3, and the factual / honorific ***ˇso*** may also have had a stronger vowel, perhaps ****ˇsa***, perhaps ****ˇswu***, or separately both (as variants). For proto-Korean I assign the honorific meaning to an incorporated bound noun 'fact' that is predicated (by the copula) as a circumlocution "it is that -- ", and I hope that this analysis can be extended to include the proto-Japanese honorific ****--(a)-sa-***. In the forms postulated below, the space before a hyphen represents a juncture.

Stage 1. Juxtaposition of the quasi-free verb stem + a quasi-bound ending or auxiliary:

1a. infinitive: ***kwuˇpu - ˇa*** 'bake' ≠ ***kwup - ˇa*** 'bent'
1b. substantive: ***kwuˇpu - ˇm (ˇya)*** 'bake' ≠ ***kwup - ˇm (ˇya)*** 'bent'
1c. gerund: ***kwuˇpu - ˇkwo*** 'bake' ≠ ***kwup - ˇkwo*** 'bent'
1d. processive: ***kwuˇpu -(ˇ)no-*** 'bake' ≠ ***kwup -(ˇ)no-*** 'bent'
1e. honorific: ***kwuˇpu - ˇso ˇi-*** 'bake' ≠ ***kwup - ˇso i-*** bent'
1f. gerund: ***saˇmo - ˇkwo*** 'make'
1g. processive: ***saˇmo -(ˇ)no-*** 'make'
1h. honorific: ***saˇmo - ˇso ˇi-*** 'make'
1i. gerund: ***aˇno - ˇkwo*** 'hug'
1j. processive: ***aˇno -(ˇ)no-*** 'hug'
1k. honorific: ***aˇno - ˇso ˇi-*** 'hug'

Stage 2. Lenition of ***p t s*** before ... ***ˇu/o-*** (in the central dialect only); the honorific structure compresses:

2a. infinitive: ***kwuˇWu - ˇa*** 'bake' ≠ ***kwup - ˇa*** 'bent'
2b. substantive: ***kwuˇWu - ˇm (ˇya)*** 'bake' ≠ ***kwup - ˇm (ˇya)*** 'bent'
2c. gerund: ***kwuˇWu - ˇkwo*** 'bake' ≠ ***kwup - ˇkwo*** 'bent'
2d. processive: ***kwuˇWu -(ˇ)no-*** 'bake' ≠ ***kwup -(ˇ)no-*** 'bent'
2e. honorific: ***kwuˇWu - ˇs[o]_ˇi-*** 'bake' ≠ ***kwup - ˇs[o]_ˇi-*** 'bent'

Stage 3. Juncture fades, the epenthetic vowel emerges, and the vowel of the infinitive -ˈ*a* harmonizes:

3a. infinitive: ***kwuˈWu-e*** 'bake' ≠ ***kwuˈp-e*** 'bent'
3b. substantive: ***kwuˈW-um (ˈye)*** 'bake' ≠ ***kwuˈp-um (ˈye)*** 'bent'
3c. gerund: ***kwuˈWu-ˈkwo*** 'bake' ≠ ***kwup-ˈkwo*** 'bent'
3d. processive: ***kwuˈWu-(ˈ)no-*** 'bake' ≠ ***kwup-(ˈ)no-*** 'bent'
3e. honorific: ***kwuˈWu-ˈsi-*** 'bake' ≠ ***kwuˈp-uˈsi-*** 'bent'
3f. gerund: ***saˈmo-ˈkwo*** 'make'
3g. processive: ***saˈmo-(ˈ)no-*** 'make'
3h. honorific: ***saˈmo-ˈsi-*** 'make'
3i. gerund: ***aˈno-ˈkwo-*** 'hug'
3j. processive: ***aˈno-(ˈ)no-*** 'hug'
3k. honorific: ***aˈno-ˈsi-*** 'hug'

Stage 4. Syncope kills ***u/o*** between a fricative/nasal and a stop or word-end, ***(C)VˈCu/o-*** > ***¨(C)VC-***; the dissyllabic minimal-vowel stems are restructured as monosyllabic consonant stems:

4a. infinitive: ***kwuˈW-e*** 'bake' ≠ ***kwuˈp-e*** 'bent'
4b. substantive: ***kwuˈW-um (ˈye)*** 'bake' ≠ ***kwuˈp-um (ˈye)*** 'bent'
4c. gerund: ***¨kwup-ˈkwo*** 'bake' ≠ ***kwup-ˈkwo*** 'bent'
4d. processive: ***¨kwup-(ˈ)no-*** 'bake' ≠ ***kwup-(ˈ)no-*** 'bent'
4e. honorific: ***¨kwuW-uˈsi-*** 'bake' ≠ ***kwup-uˈsi-*** 'bent'
4f. gerund: ***¨sam-ˈkwo*** 'make'
4g. processive: ***¨sam-(ˈ)no-*** 'make'
4h. honorific: ***¨sam-oˈsi-*** 'make'
4i. gerund: ***¨an-ˈkwo*** 'hug'
4j. processive: ***¨an-(ˈ)no-*** 'hug'
4k. honorific: ***¨an-oˈsi-*** 'hug'

The space before the hyphen is significant because it represents a juncture. When ***-m***, ***-n***, ***-l***, or ***-s*** was preceded by a (juncture +) consonant and not followed by a vowel, it was syllabified: ***kwup -ˈn*** '... that is bent' but ***kwup -ˈn_i*** 'the one that is bent; the fact that it is bent'. Both forms are dissyllabic, and both are assigned the default melody of Low-High. The presence of juncture or syllabicity does not preclude morphophonemic adjustments; cf English "an_ aim" and "a_ name" or "them_ all" and "the_ mall". The old adnominal particle ***s*** in Korean behaved much like the English detachable possessive particle: "I want the guy who did that_'s name : I want the guy who did them_'s name : I want the guy who did this_'s name". That being the

case, the epenthetic vowel could have emerged at any point and have become phonemic only when the juncture collapsed. The syllabicity of the voiced-sonant endings might even have been realized as a minimal vowel from the beginning. It is possible that ***kwu˙p-un*** and ***kwu˙pu-n*** were realized in slightly different ways, as are the English phrases "a sit-in" and "a-sittin'". That is, we have a stage with syllabic ***m***, ***n***, and ***l*** and then later a stage in which the syllabicity was promoted to the status of a vowel, but in the central dialect that promotion could take place only AFTER the syncope and lenition.

2. The t-irregular stems

2.0. Because the verb stems of the ***···T-*** (***t/l***) type are particularly nettlesome, we will focus on them. The forms of these stems are often homophonous with paradigmatic forms from regular stems that end in the consonant ***···t-*** and with the "l-extending vowel stems" that are frequently treated by Korean grammarians as "regular" l-stems, in part because of their much greater number. To illustrate the forms for these three types of stems, I have chosen three verbs to serve as a minimally contrasting set in Middle Korean, setting aside the likelihood that ***ket-*** 'gather' is from ****kec-*** as deduced from the compound stem ***selGec-*** (see §7.0); there is no evidence that the other ***···t-*** stems come from ****···c-***. Some of the cited forms are not attested, but they are constructed to fit with attested forms from other verbs, such as ***¨a(l)-*** 'know', ***toT-*** 'run', and ***pat-*** 'get'. The rules for lenition of ***···T-*** to ***···l-*** are similar to the rules for leniting ***···p-*** to ***···W-*** (and later ***···w-***) and ***···s-*** to ***···z-*** (and later zero). In all cases, the verbs are of the basic shape ***··· ˙C$^{u}/_{o}$-***, normally with the Low-High accentuation, and that group of verbs also includes stems with the shapes ***··· ˙m$^{u}/_{o}$-*** and ***··· ˙n$^{u}/_{o}$-***. When the final vowel is elided, the initial low pitch combines with the high pitch of the original second vowel to make the rising pitch heard on the single syllable that remains: after restructuring, ***na˙m-a*** but ***¨nam-˙kwo***, and ***si˙n-on*** but ***¨sin-˙kwo***. The rising tone is generated in the same way when the last vowel of the leniting stems is elided. The elision takes place before a consonant but also before the honorific bound auxiliary ***-($^{u}/_{o}$)˙si-***, as explained below; the accent moved back to the minimal vowel when ***-˙si-*** was attached to a stem ***··· ˙$^{u}/_{o}$-***.[6] In the table below the stem (with tag) is followed by the forms: (1) gerund, (2) infinitive, (3) modulated substantive, (4) prospective modifier, (5) modifier, (6) substantive, (7) processive bound stem, (8) honorific bound stem.

*¨ke(l)- < *ke˙lu-* 'hang'	*¨keT- < *ke˙tu-* 'walk'	*ket-* 'gather'
1 *¨kel˙Gwo*	*¨ket˙kwo*	*ket˙kwo*
2 *ke˙le*$_1$	*ke˙le*$_2$	*ke˙te*
3 *ke˙lwom*$_1$	*ke˙lwom*$_2$	*ke˙twom*
4 *¨kel, kel˙l+ ˙i* [1]	*ke˙lul*	*ke˙tul*
5 *¨ken*	*ke˙lun*	*ke˙tun*
6 *ke˙lum, ¨kelm+ ˙ye*	*ke˙lum*	*ke˙tum*
7 *¨ke(˙)no-*	*¨ket(˙)no-*	*ket(˙)no-*
8 *¨ke˙lusi-*	*¨ke˙lusi-*	*ketu˙si-*

[1] The forms represent *¨kell = ke˙l[u]-l*. The double *ll* was automatically simplified except when followed by the morpheme *˙i*. See (1a) below.

The leniting stem retains the final *...t-* when a morpheme that begins with a consonant is attached: *¨ket-˙kwo, ¨ket-˙t i, ¨ket-(˙)no-n*. The final weakens to a flap [r] = /l/ when a surface vowel follows, whether that is intrinsic to the attached morpheme, as in the modulator *-˙w$^{u}/_{o}$-*, or is epenthetic, as in the substantive *-(˙u)m*, the modifier *-(˙u)n*, and the prospective modifier *-(˙u)l*. Because of the accent, however, we presume that the latter forms attach to the leniting stems as they do to vowel-final stems in general, without the epenthetic vowel: **ke˙tu- + -n = ke˙lu-n* (and not **¨kel-un*) 'walk', but *ket- + -˙un = ke˙t-un* 'gather' because it is a consonant-final stem. From the hypothesized original stems of **ke˙tu-* 'walk' and **ke˙lu-* 'hang' we can derive the representative paradigmatic forms by the processes described as ordered stages below. The result of segmental suppression is given after an equal sign, which is also used between two outputs that converge phonologically (as homonyms). The not-equal sign is used between two outputs that were kept phonologically distinct.

(1) stem and ending are juxtaposed (no changes)
ke˙lu -n 'hang' ≠ *ke˙tu -n* 'walk' ≠ *ke˙t- n* 'gather'
ke˙lu -l 'hang' ≠ *ke˙tu -l* 'walk' ≠ *ke˙t- l* 'gather'
ke˙lu -m 'hang' ≠ *ke˙tu -m* 'walk' ≠ *ke˙t- m* 'gather'
ke˙lu -˙kwo 'hang' ≠ *ke˙tu -˙kwo* 'walk' ≠ *ke˙t- ˙kwo* 'gather'

(1a) *...˙l$^{u}/_{o}$-* and *˙...˙l$^{u}/_{o}$-* stems elide *$^{u}/_{o}$* and simplify *l-n* and *l-l* to *l* except for *l-l + ˙i* 'fact'
ke˙lu -n > ke˙[lu] -n = ¨ke -n 'hang' ≠ *ke˙tu -n* 'walk' ≠ *ke˙t- n* 'gather'
˙ko˙lo -n > ˙ko˙[lo] -n = ˙ko -n 'grind'

ke˙lu -l > ke˙[lu] -l = ¨ke -l, ke˙l[u]-l ˙i = ¨kel- l ˙i
'hang' ≠ *ke˙tu -l* 'walk' ≠ *ke˙t- l* 'gather'
˙ko˙lo -m (˙i-˙e) > ˙kol[o] -m (˙ye) = ˙kol -m (˙ye) 'grind'
ke˙lu -m (˙i-˙e) > ¨kel -m (˙ye) 'hang' ≠ *ke˙tu -m (˙ye)*
'walk' ≠ *ke˙t -m (˙ye)* 'gather'
ke˙lu -˙kwo > ke˙l[u] -˙kwo = ¨kel -˙kwo 'hang' ≠ *ke˙tu-˙kwo*
'walk' ≠ *ket -˙kwo* 'gather'
ko˙lo -˙kwo > ko˙l[o] -˙kwo = ¨kol -˙kwo 'grind'

There are unanswered questions. Was this a unified change, as I have here described it, or did it happen separately to each of the form types exemplified above? The rule as given yields the MK forms but not all the modern dialect forms. Some dialects appear to have skipped this rule. See Martin 1992:240-1 (and references therein) for an incomplete account of the dialect variation.[7] The modern Seoul forms are **kēn, kan; kēl(q) kēll_i, kal(q) kall_i; kēlm(_ye), kalm(_ye).** Many younger speakers suppress the vowel length. Earlier the difference between the single-dot (High) accent and the no-dot (Low) accent was lost in Seoul.

(1b) *l s* suppresses the *l*:
˙tulu -˙sa > ˙tul -˙sa > ˙tu[l] -˙sa = ˙tu -˙sa 'enter'
(1447 Sek 13:58a)[8]

(1c) *CV˙t$^{u}/_{o}$- > ¨CVt-* before *-k…*, *-t…*, and the processive bound auxiliary *-(˙)no-*
ke˙lu -˙kwo > ke˙l[u] -˙kwo = ¨kel -˙kwo 'hang' ≠
ke˙t[u] -˙kwo = ¨ket -˙kwo 'walk' ≠ *ket -˙kwo* 'gather'

(2) In the central dialect (a) *t* lenites to *l* before *… ˙$^{u}/_{o}$-* (as *p* lenites to *W* and *s* to *z*).[9] Morpheme-initial *k* lenites to *G* after *…l-* (§7.2.1) but not in all dialects. (For *…z-G*, *…y-G*, *…i-G* see §7.2; *…zG-* §6.3.)
ke˙lu -n > ke˙[lu] -n = ¨ke -n 'hang' ≠ *ke˙tu -n* 'walk' >
ke˙lu -n ≠ ke˙t -n 'gather'
˙ko˙lo -n > ˙ko˙[lo] -n = ˙ko -n 'grind'
ke˙lu -l > ke˙[lu] -l = ¨ke -l, ke˙l[u] -l ˙i = ¨kel -l ˙i 'hang' ≠
ke˙tu -l > ke˙lu -l 'walk' ≠ *ke˙t -l* 'gather'
˙ko˙lo -l > ˙ko˙[lo] -l = ˙ko -l, ˙kol -l ˙i 'grind'
ke˙lu -˙kwo > ke˙l[u] -˙kwo = ¨kel -˙kwo > ¨kel -˙Gwo
'hang' ≠ *¨ket -˙kwo* 'walk' ≠ *ket -˙kwo* 'gather'
˙ko˙lo -˙kwo > ˙kol[o] -˙kwo = ˙kol -˙kwo > ˙kol -˙Gwo 'grind'
ke˙lu -m (˙i-˙e) > ke˙l[u] -m (˙ye) = ¨kel -m (˙ye) 'hang' ≠
ke˙tu -m (˙ye) > ke˙lu -m (˙ye) ≠ ke˙t -m (˙ye) 'gather'
˙ko˙lo -m (˙i-˙e) > ˙ko˙[lo] -m (˙ye) = ¨kol -m (˙ye) 'grind'

(3) (a) Juncture fades; (b) the epenthetic vowel emerges.
ke˙lu -n > ke˙[lu] -n = ¨ke -n > ¨ken 'hang' ≠ *ke˙lu -n > ke˙lun* 'walk' ≠ *ke˙t -un > ke˙tun* 'gather'
˙ko˙lo -n > ˙ko˙[lo] -n = ˙ko -n > ˙kon 'grind'
ke˙lu -l > ke˙[lu] -l = ¨ke -l > ¨kel, ke˙l[u] -l ˙i = ¨kel -l ˙i > ¨kel˙l_i 'hang' ≠ *ke˙tu -l > ke˙lu -l > ke˙lul* 'walk' ≠ *ke˙tul* 'gather'
˙ko˙lo -l > ˙ko˙[lo] -l = ˙ko -l, ˙kol -l ˙i > ˙kol, ˙kol˙l_i 'grind'
ke˙lu -˙kwo > ke˙l[u] -˙kwo = ¨kel -˙kwo > ¨kel -˙Gwo > ¨kel˙Gwo 'hang' ≠ *¨ket -˙kwo > ¨ket˙kwo* 'walk' ≠ *ket˙kwo* 'gather'
˙ko˙lo -˙kwo > ˙kol[o] -˙kwo = ˙kol -˙kwo > ˙kol˙Gwo 'grind'
ke˙lu -m (˙i-˙e) > ke˙l[u] -m (˙ye) = ¨kel -m (˙ye) > ¨kelm, ¨kel˙m_ye 'hang' ≠ *ke˙tu -m (˙ye) > ke˙lu -m (˙ye) = ke˙lum, ke˙lu˙m_ye* ≠ *ke˙t -um (˙ye) = ke˙tum, ke˙tu˙m_ye* 'gather'
˙ko˙lo -m (˙i-˙e) > ˙ko[lo] -m (˙ye) = ˙kol -m (˙ye) > ˙kolm, ˙kolm_˙ye 'grind'

(4) Syncope kills *¼o* between a fricative/nasal and a stop or word-end, *(C)V˙C¼oC- > ¨(C)VC-*. Thereby the dissyllabic minimal-vowel stems (including *ke˙l[u]-* 'hang') are restructured as monosyllabic consonant stems. With the suppression of the minimal vowel, this is when the ···(l)- stems became l-dropping consonant stems. But Martin 1954 had good reasons to describe them as l-extending vowel stems, for dialects vary in the environments that trigger the suppression or extension, and those are the criteria which decide the appropriate synchronic analysis.
ke˙lu -m (˙i-˙e) > ke˙l[u] -m (˙ye) = ¨kel -m (˙ye) > ¨kelm, ¨kel˙m_ye 'hang' ≠
ke˙tu -m (˙ye) > ke˙lu -m (˙ye) = ke˙lum, ke˙lu˙m_ye → *ke˙l-um, ke˙l-u˙m_ye* 'walk' ≠
ke˙t-um (˙ye) = ke˙tum, ke˙tu˙m_ye 'gather'

(4a) When the honorific bound auxiliary *-˙si-* is attached to the now restructured forms the accent retreats to the new epenthetic vowel:[10]
ke˙lu-˙si- > ke˙l[u]-˙si- → ¨ke˙l-usi-$_1$ 'hang it' →
?*¨*ke˙l[u]-si-* > Seoul kēsi-
ke˙tu-u˙si- > ke˙t[u]-u˙si- = ¨ke˙l-usi-$_2$ 'walk' > Seoul kēlusi-, dialect kētusi-
a˙n[o]-˙si- > a˙n[o]-o˙si- = ¨a˙n-osi- 'hug' > Seoul ānusi-
ka˙m[o]-˙si- > ka˙m[o]-o˙si- = ¨ka˙m-osi- 'wind it' > Seoul kāmusi-

(5) Other happenings (Martin 1992:240): "It is unclear whether all of the several nonstandard treatments [of ···(l)- stems] are analogical innovations or whether some are simply preserving uncontracted forms from the earlier language." Not all dialects underwent all the stages.

2.1. The 12 shorter stems that end in ···*T*- are of two accent types:

Rising < Low-High

¨keT- = *¨ket-/ke˙l[u]-* < **ke˙tu-* vi 'walk'
¨kyeT- = **¨kyet-/kye˙l[u]-* < **kye˙tu-* vt 'weave'[11]
¨kiT- = *¨kit-/ki˙l(ᵘ⁄ₒ)-* < **ki˙tᵘ⁄ₒ-* 'pump, draw water'
¨siT- = *¨sit-/si˙l[ᵘ⁄ₒ]-* < **si˙tᵘ⁄ₒ-* vt (1) 'load; record; store', (2) 'acquire, get' [treated by LCT 1964 as a separate stem *¨sit-*], (3) 'worry' [treated by Wmk as a separate stem *sil-*]
¨huT- = *¨hut-/hu˙l[u]-* < **hu˙tu-* = *huth-* vt 'scatter, disperse it', vi 'get dispersed, scattered'
¨tuT- = *¨tut-/tu˙l[u]-* < **tu˙tu-* vi 'drop, fall'
¨mwuT- = *¨mwut-/mwu˙l[u]-* < **mwu˙tu-* vt 'ask, inquire'
¨nwuT- = *¨nwut-/nwu˙l[u]-* < **nwu˙tu-* vi 'get scorched'
¨pwuT- = *¨pwut-/pwu˙l[u]-* < **pwu˙tu-* vi 'swell; increase'

Low < Low-Low

tuT- = *tut-/tul[u]-* < **tutu-* vt 'listen, hear; heed; (= *math-*) smell'
toT- = *tot-/tol[o]-* < **toto-* vi 'run'

The four longer stems are probably compounds, but the components are uncertain:

a˙chyeT- = *a˙chyet-/a˙chyel[o]-* < **a˙chyeto-* vt 'dislike, hate'
tatoT- = *tatot-/tatol[o]-* < **tatoto-* vi 'arrive' (?= **ta[h]-toT-*)
˙skoytoT- = *˙skoytot-/˙skoytol[o]-* < **˙skoytoto-* (?= **˙skoy-toto-*) vi 'wake up, come awake'
ilkhoT- = *ilkhot-/ilkhol[o]-* < **ilkhoto-* vt 'say, state, cite; praise'[12]

2.2. The all-low accentuation of the stem *tuT-* cannot readily be attributed to the vowel, for in the other type (Low-High) we find *¨tuT-* 'drop' and *¨huT-* 'scatter'. But the group of *¨···(l)-/···˙lᵘ⁄ₒ-* stems of the Low-High type regularly suppress the expected rise if (and only if) the first vowel of the stem is the minimal vowel *ᵘ⁄ₒ*:

[¨]cu(l)-/cu˙l[u]- < **cu˙lu-* adj 'be slushy, wet', *[¨]mu(l)-/mu˙l[u]-* < **mu˙lu-* vt 'bite', *[¨]nu(l)-/nu˙l[u]-* < **nu˙lu-* adj 'be better'; (?*) vi 'get/be longer', *[¨]pu(l)-/pu˙l[u]-* < **pu˙lu-* vt 'envy'

[¨]co(l)-/co˙l[o]- < **co˙lo-* adj 'be fine, small', *[¨]ko(l)-/ko˙l[o]-* < **ko˙lo-*$_1$ vt 'change it', **[¨]ko(l)-/ko˙l[o]-* < **ko˙lo-*$_2$ vt 'say'

(defective; < **[¨]koT-*, see n. 12), *[¨]ko(l)- / ko˙l[o]-* < **ko˙lo-*$_3$ adj 'be sideways, horizontal', *[¨]mo(l)- / mo˙l[o]-* < **mo˙lo-*$_1$ vt 'roll it up', *[¨]mo(l)- / mo˙l[o]-* < **mo˙lo-*$_2$ vt 'put solid stuff into a fluid', *[¨]no(l)- / no˙l[o]-* < **no˙lo-* vi 'fly', *[¨]to(l)- / to˙l[o]-* < **to˙lo-*$_1$ adj 'be sweet', *[¨]to(l)- / to˙l[o]-* < **to˙lo-*$_2$ vt 'weigh it', *[¨]to(l)- / to˙l[o]-* < **to˙lo-*$_3$ vt 'lift' (?= *[¨]tu(l)-*)

The readiest explanation for the accentuation of *tuT-* and *toT-* is that the vowels are reductions of more robust nuclei, perhaps ?**¨tiT-* or ?**¨tuyT-* 'hear' and ?**¨teT-* or ?**¨taT-* 'run'. Such reconstructions, adjusted for pre-Korean, would improve the likelihood that the stems are cognate to the corresponding proto-Altaic forms mentioned in §3.0.

2.3. Of the 26 regular *...t-* stems of one syllable in Middle Korean, 22 are low in accent. One (*¨et-* vt 'get') is rising in all forms and three carry an initial High dot that is probably due to the initial stop cluster resulting from an elided minimal vowel (Ramsey 1993:439): *˙ptut-*$_1$ < **pu˙tut-* vt 'bite, snatch, graze', *˙ptut-*$_2$ < **pu˙tut-* vi 'fall, drop', *˙pthut-* < *pu˙thut-* vt 'pluck'. I suspect that *¨et-* goes back to **a-˙i-* 'make exist', a causative formed on the hypothesized stem **a-* cognate with the Japanese stem **a-ra-* 'exist' (the **-ra-* is an accreted suffix). The lost Korean stem, in service as a bound auxiliary, is the likely source of the infinitive morpheme *-˙ᵉ⁄ₐ* < *-˙a* (see Martin 1992:70, 1995), and it will probably account also for the usual replacement by *-(ᵘ⁄ₒ)˙sya-* < **-(ᵘ⁄ₒ)˙si-˙a-* of the expected form **-(ᵘ⁄ₒ)˙syw$^{u}/_{o}$-* (actually found in *-(ᵘ⁄ₒ)˙sywo˙sye* 'please') for the honorific *-(ᵘ⁄ₒ)˙si-* + the modulator *-˙w$^{u}/_{o}$-*, which I identify as another bound auxiliary that is cognate with the other Japanese verb of existence **wo-* found in the stems *wi[y]-* < **wo-Ci-* and *wor-* < **wo-ra-*, whether or not the Japanese *w-* was earlier **b-* (as Martin 1987 assumed). The honorific infinitive *-(ᵘ⁄ₒ)˙sya* is a straightforward reduction of *-(ᵘ⁄ₒ)˙si-* + *-˙a*. The high pitch on *-˙a* was nondistinctive in proto-Korean; see below. At this time I have no explanation for the final stop of *¨et-* so the derivation suggested above, which coincides with that offered for the Japanese stem *e[y]-* 'get' in Martin 1987:681, is highly speculative.[13] It assumes an earlier crasis of *a + i* > *e* (resembling the later course of *ey* > modern Seoul [e]), for which I see possible evidence in the vowel of *¨eps-* 'be nonexistent, lack' and the defective stem *¨est-* found in the bound infinitive *¨es˙te* and the derived adverb *¨es˙ti* 'how': in both I detect an indeterminate (= interrogative/negative) morpheme perhaps from **a[n]˙i* < *a˙ni* 'not'. No other attempts to explain the

unusual accent of the stems *¨et-* 'get', *¨eps-*, and *¨est-* have come to my attention. If *¨soym-* (?= *¨soym-/*soy˙m[ɯ/o]-* < **soy˙mɯ/o-*) vi 'spring/ spurt up' belongs with these, that is because it came directly from *¨soym* 'source, wellspring', which in turn is probably from the modulated substantive of *˙soy-* 'leak'.

2.4. The one-syllable **-(l)-** stems are all intrinsically dissyllabic.[14] Of the 75 such stems, 17 are accented High *˙...(l)- / ˙... ˙l[ɯ/o]-*, but the majority are Low *¨...(l)- / ... ˙l[ɯ/o]-* < **... ˙lɯ/o-*. There are several contrasting pairs, such as *˙tu(l)- / ˙tu˙l[u]-* < **˙tu˙lu-* vi 'enter' and *[¨]tu(l)- / tu˙l[u]-* < **tu˙lu-* vt 'hold; lift, raise, hold up',[15] and it should be noted that the first syllable of each such constrasting pair contains the minimal vowel *ɯ/o*. The accentuation is explored in §9.1.

2.5. The unusual treatment of the **...*T-*** stems in Cincwu (South Kyengsang), in Myengcwu county of Kanglung, and in certain parts of Hamkyeng may cast doubt on the lenition hypothesis (see Martin 1992: 234). In those dialects the **...*T-*** stems show an unusual development. As expected, the **...*T-*** stem ends in **l** (flap) before a vowel, but before a consonant it ends in **lq**, the reinforcing (tensifying) **l** that in Middle Korean was often written with the cluster ***lq*** and usually represented the prospective modifier ending. Unlike Middle Korean and the other modern dialects, in those areas the reflexes of a **...*T-*** stem lack an allomorph that ends in **t**. That would appear to disconfirm the lenition hypothesis, at least for the **...*T-*** stems. For the **...*W-*** and **...*z-*** stems these dialects, like other dialects, have a few verbs that preserve the original **...*p-*** and **...*s-*** unlenited, such as **nwup-** < ***nwuW-*** 'lie down' and the ubiquitous **wūs-** < ***¨wuz-*** 'laugh'. If we accept the view that the **...*T-*** stems earlier ended in [r], then the forms from Cincwu etc. are preserving the liquid and all that needs to be accounted for is the reinforcement (the **q**). But that leaves us to explain how the resulting strings *-rk-, *-rt-, *-rn-, *-rc- and perhaps *-rs- (I lack an example) became Middle Korean ***-tk-***, ***-tt-***, ***-tn-***, and ***-tc-***. Assimilation might account for ***-tt-*** but that would lead us to expect ***-kk-*** and ***-nn-***, and those do not show up until a later assimilation took hold.[16]

For the **...*T-*** stems, instead of **...tɯ/o-* > **...t-/l-* and **...r-* (or **...rɯ/o-* > **...t-/l-*), there is a third hypothesis that posits a basic form of the shape **...*lt-***. That was first proposed, I believe, by Eung-do Cook [Kwuk Ungto] 1973, and it would neatly explain the dialect forms with **...lq-** but leave us with the problem of accounting for the Middle Korean forms. If we take as basic the shape **kel ˙tɯ/o-* then forms such

as *ke˙le* will have to be explained as dropping the *t* (as well as the minimal vowel if that is posited) or, more likely, as dropping the */l/* before */t/*, a more general rule needed elsewhere, and then leniting the *t* that remains, leading us back to a version of the lenition hypothesis. But that would imply that the elision of */l/* before apicals was earlier than the lenition(s), and call for a stage at which Middle Korean *ke˙l-e* was pronounced **ke˙t-e*, and yet we know that the *t* of *ke˙t-e* 'gather' remained intact, so it is hard to see how the Koreans of that period could decide to lenite the one while ignoring the other. In both the first hypothesis and the third hypothesis the lenition would need to have taken place at a stage when the form was *ke˙tu-* + *-˙a*. The second hypothesis (**...r-*) would not require that stage, for the form would be simply *kel-˙e*. But then we are left to explain how *kel-* + *-˙kwo* got to be *¨ket˙kwo* (Hamkyeng *kel˙kkwo*). It should be kept in mind that the obstruent strings contain an automatic reinforcement in the modern language and probably earlier, so that what we write as **kētko** is pronounced **kētkko** (in relaxed speech the **t** is omitted: **kē[t]kko**), and the pronunciation of *¨ket˙kwo* was probably *¨ket˙kkwo*, as well. That lends support to an explanation of the **···lq-** dialect forms as an analogical restructuring that created stems **···lt-** to match the two that end in **···lth-** (**halth-**, attested 1736, < *halh-* 'lick, taste'; **hwulth-** 'thresh', attested 1876) as well as those that end in **···lp-** < *···lW-* (**pālp-** < *¨polW-* 'tread') and **···lk-** (**nulk-** < *nulk-* 'be/get old'). On the other hand, compounds such as *tol˙Gi-* 'make/let one (or it) run' are more easily derived from **tol-ki-* [tɔrgi-] than from *toT-* + *-˙G[¼o]-i-*, for we would have to assume a stage **toto-ki-* in order to account for the lenition of */t/* to */l/* before the suppressing of the minimal vowel, whether that or the */l/* was the trigger for the lenition of *k* to *G* in the attached bound auxiliary. Similar remarks apply to *tul˙Gi-* 'let/make one hear' or 'get heard'. The derivations generating **ketulek** (**kketulek**, **kkettulek**) and **kētulum** 'swaggering, strutting' are presumably from *¨kel-* + *tu···* with the common elision of */l/* before */t/*.

The hyangka equivalent of Middle Korean ··· *¨ma˙ta* 'each' was written with the phonograms *MA-˙LAK* (15:5, 19:6) but it would be rash to assume that this is an example of "*l* > *t*" rather than the opposite, as found in "*mati*" (1103 Kyeylim #161 *MA-˙TTYEY*) > *ma˙li* = *me˙li* 'head'. The quasi-particle must come from an inflected form of the stem *¨ma(l)- / ma˙l[o]-* < **ma˙lo-* 'desist, refrain from' (Martin 1992:689b), and the Middle Korean version is probably the (otherwise unattested) indicative assertive *¨ma˙ta* = *¨ma(l)-* + *-˙ta*. If the final

consonant of *ˈLAK* was no longer pronounced in 12th-century northern China, it can be disregarded, though a possible interpretation would be the emphatic particle ***k***, for which the modern dialect **matang** and the "nonstandard" **matak** (Kim Minswu and Hong Wungsen 1968:443a) could be adduced as evidence. The most that the hyangka version can tell us is that the elision of the liquid before apicals in stems of the type *¨···(l)-/···ˈl[¼o]-* was later than the assignment of phonograms in the poem, for that was an attempt to write */malta(k)/*. But it is quite possible that the word was a different inflectional form of the verb, the infinitive *maˈla*; if so, it tells us nothing new about the phonology.[17]

3. Where did the -t/l- alternation come from?

3.0. According to one theory, quite independently of alternations in the *···W-* and *···z-* verbs, the *-t/l-* alternation of the *···T-* stems goes back to a liquid corresponding to the Altaic $*r_2$ that is posited on the basis of etymologies that show the correspondence (Poppe 1960:81): proto-Mongolian r, Tungusic r, Korean [r] = /l/, pre-Turkic r_2 (Chuvash r, Old Turkish and ?proto-Turkish z). Two etymologies are particularly relevant:[18]

1) RUN *toT-* 'run' : proto-Altaic $*ter_2$- > Mg *tergel-* 'run' [written Mg?], Chuvash *tar-* ("< **tär-*") ['run away, flee'], OTk *täz-* 'run'

2) WALK *¨keT-* 'walk' : proto-Altaic $*ker_2$- > Mg *ker-ü-* 'wander' (Kalmyk *ker-*), OTk *käz-* 'go around, wander, travel' (Azerbaijani *käz-* 'run', Turkish *gez-* 'stroll')[19]

The Korean forms are important in that they rescue the etymologies from the large group observed by Doerfer to be based on comparisons between two neighboring families and therefore suspect of being loans, in this (typical) case Turkic and Mongolian, with a telltale absence of Tungusic cognates. Different Turkic and Mongolian forms are found in Starostin 1991:71 and 103. He reconstructs pA **kētV* 'go, go away', but offers no Tungusic forms.

Before we accept the hypothesis that these two stems exemplify the correspondence of Korean *T* with proto-Altaic $*r_2$ we must explain why the two Korean stems (*toT-* and *¨keT-*) have different vowels and belong to different accent types, while the proto-Altaic reconstructions have the same vowel ($*ter_2$- and $*ker_2$-). That remains an obstacle to judging them cognate, but the picture will brighten if we make the assumption, offered above, that *toT-* 'run' originally had a more robust

vowel such as ?*¨*teT-* or ?*¨*taT-*, an assumption that explains why the accentual behavior of this stem and that of *tuT-* 'hear' < ?*¨*tiT-* or ?*¨*tuyT-* are anomalous. An internal etymology deriving *tali* 'leg' from ?*¨*taT-/ta˙lo-* with the suffix *-i* ("that with which one runs") would be plausible, at the risk of suggesting (by a reverse process) a rescue of the Miller derivation of ¨*polW-* = ¨*polp-* / *pol˙W[o]-* < **po˙lo˙po-* 'tread' from ˙*pal* 'foot', but the accentual discrepancy makes that rehabilitation unlikely (see n. 51), unless we assume that a canonical pattern was imposed on the noun.

Even if we tentatively accept these two etymologies, it does not necessarily follow that *T* was proto-Korean /l/ pronounced as [r] and that the morphophonemic alternation it represents was a feature of proto-Korean, thus keeping it separate from the normal /l/, also pronounced as [r] when between vowels. Instead, *T* might have been a voiced stop [d], provided we make the assumption that obstruent voicing was distinctive in proto-Korean (some would claim even in Middle Korean) and that its modern nondistinctiveness in /t/ (= [t] or [d] according to environment) came into being at some point after proto-Korean. The change of, say, ?**ke˙d[u]-˙kwo* to ¨*ket-˙kwo* is more plausible than the change of ?**ke˙l[u]-˙kwo* to ¨*ket-˙kwo*. Left to explain is the accent of the honorific ¨*kel-usi-*. Accounting for that would require two stages: the reduction of ?**ke˙du-* to ?*¨*ked-* (with the forms ?*¨*ked˙non* and ?*¨*ked˙kwo*), and only then the lenition of the *d to [r] = /l/: ?*¨*ked-usi-* > ¨*ke˙l-usi-*. But that would lead us to predict the nonexistent *¨*ke˙d-e* rather than *ke˙l-e* for the infinitive of 'walk'. I see no immediate way out of this dilemma. Another, external, argument against the notion that proto-Korean had /d/ is that the development of a proto-Altaic [r] to [d] is phonetically less likely than the opposite change. But we do not know that the proto-Altaic $*r_2$, if it existed, was an [r] rather than a [z] (as in the Turkic reflexes), or indeed that it was not a [d], i.e. $*d_2$ rather than $*r_2$. And we do not know that Korean was just another Altaic language.

3.1. There are, unfortunately, few cognate possibilities for the ...*T*-stems in Japanese. For ¨*keT-* 'walk' the Japanese noun *kati* (variant *kasi*) 'walking' is suggested in Martin 1966:245 (#252) but also offered (#253) is OJ **kaywof-* 'go to and fro' ?< pJ **ka-dwopa-* or **kad-wopa-*, a word elsewhere compared with Korean ˚*ka-* 'go' (cf Chuvash *kay-* 'go' and *kălar-* 'go out'). The OJ verb stem *kaye[y]-* = *kare[y]-* < pJ **ka(-)da-Ci-* = **ka(-)ra-Ci-* 'get apart (distant)' has also been offered

as a possible cognate for the Korean words for 'walk' and 'go', and the variation in that verb of *-y-* < **-d-* with *-r-* is highly suggestive of the alternation of [t] and [r] in the Korean stem *¨keT-*, though the *(-)ra-* may be part of a separate morpheme in Japanese, as implied by my parenthesized hyphen, and in any event this was not a morphophonemic alternation but a regional variation.[20] For the Korean stem *toT-* 'run' we might consider J *tat-* with the primary meaning 'stand' but with common secondary meanings of 'leave, go away' (as in 'left the city') and '(time) elapse'. (The vowel discrepancy argues against comparing J *tat-* with K *twot-* 'rise; sprout'. Chuvash *tăr-* 'stand' – *tără* 'top, summit', *tărri* 'on top of, above' – presumably belongs with Turkish, Old Turkish, and Yakut *tur-* 'stand', a verb which Starostin 1991:101 compares with J *tat-*.) If the J *kati* and *tat-* are taken as cognates for *¨ket-* 'walk' and *toT-* 'run' we have external evidence for proto-Korean /t/ = [d] or [t] (conceivably /d/ if proto-Korean really had two sets of obstruents that are merged in Japanese cognates) rather than for proto-Korean [r] = /l/ in the *...T-* stems.[21] On the other hand, a possible comparison for *toT-* 'run' can be found in J *itar-* 'reach', for which the semantic extension (by way of something like "run to") is offered by the stem *tatoT-* 'reach' if that longer stem is, as suggested above, a compound of *ta[h]-* 'touch, reach' + *toT-* 'run' and if the Japanese stem contains the verb prefix *i-* or a truncation of the proto-Japanese stem **ika-* 'go'.[22] However, the J stem *itar-* forms a pair with *itas-* 'achieve, do', so that the intransitivizing *-r-* (vs transitivizing *-s-*) is best viewed as a bound stem or formant, pJ **-ra-* (vs **-sa-*) according to Martin 1987, leaving us with **ita* as the root to be compared, and because that carries the high register of accent it cannot be identified with the root **ita* that means 'painful' but also means 'extreme' (cf *ito* 'very' < *ita-[kʃu)*, for that carries an accent of the low register.[23]

There are a number of transitivity pairs like *itar-/itas-*, and Miller 1971:132 believes them to exhibit a morphological "device" that exemplifies proto-Altaic **l_2*. We might think that **r_2* would be a more exciting choice, but it had been preempted by Miller to explain certain OJ etyma in which he sees a split of the **r_2* into Japanese *t* when the morpheme begins with a continuant (an unusual kind of conditioning) and into *r* otherwise; Starostin 1991:73-4 offers counterexamples. For the proto-Altaic **l_2*, whose very existence has been called into question by several scholars, Miller 1971:132 offers as exemplary the pair *noru/nosu* [= OJ *nǫr-/nǫse[y]-* 'ride'/'load'], proclaiming that "these

forms cannot possibly be analyzed as resulting from the addition of suffixal elements or enlargements of the roots". That pair was a poor choice. (See n. 46 for a pair that is better but lacks Turkic cognates). The existence of the J noun *ni* 'burden' < **ni[y]* < pJ **nǫ-Ci* (cf *nǫ-tǫri* 'bearing a burden'), makes it clear that the *-r-* and the *-s-* are suffixed to the bare form of a proto-Japanese noun **nǫ*. It is quite possible that similar morphemes existed in the non-Japanese languages, but these two suffixes can be independently explained within Japanese as an incorporation of the two verb stems **ara-* 'exist' and **sǫ-* 'do, make': **nǫ-[a]ra-* 'exist as a burden', **nǫ-sǫ-Ci-* > **nǫ-sa-Ci-* 'make it a burden'. In Martin 1966 an etymology RIDE compared J *nǫr-* 'ride' with MK *¨no(l)-/no˙lo-* < **no˙l[o]-* < **no˙lo-* 'fly', putting it with the semantic misfits, and an etymology CARRY compared *nǫse[y]-* 'load' with MK *nolo / nolG···* < **noloG* < **nolok* 'a ferry' (> **nalwu**) and modern K **nalu-** ?< **nalo- / nalG-* (cf Hamkyeng **nalku-**) < **nalok-* 'convey', which I assumed came from **nolu-* < **nolo-*, though there is no supporting evidence. But the meaning 'ferry' comes from the compound **nalwuppay** < *nalwo[p]poy* (1880 Kyengsin 78) < *nolo s poy* (?1775 Han-Cheng 12:20b) = **nolo s ˙poy* 'ferry boat' and the basic meaning of *nolo / nolG···* < **nolok* is 'a narrow neck of a river or sea inlet', which may or may not carry overtones of "a place where you can ferry things". I now doubt both etymologies. Miller also extols the pair *tar-u/tas-u* 'suffice/add', which he compares with OTk stems *tol-* 'get full' and *toš-* 'fill it' (cf Menges 1975:47-9, who reconstructs proto-Tk **tō-l/š-*), and explains the vowels as "ablaut", using the term in a somewhat different sense from that familiar to Indo-Europeanists (see Martin 1996b n.30). But only the intransitive member of the pair is attested for Old Japanese, so the transitive may not have been formed until sometime after 800. Nonetheless, we can speculate that the paired stems *itar-/itas-* mentioned above are made from *tar-/tas-* with the addition of the prefix *i-* and can relate both pairs to Korean *toT-*. Interestingly, there are no phonogram-written attestations for the transitive *itas-* in the Old Japanese texts.

3.2. Moreover, for at least one *···T-* verb there are possible Altaic cognates that indicate that the proto-Korean consonant was an obstruent rather than a liquid:

3) BIG *¨pwuT-* vi 'swell; increase' : Mg *büdü(g)ün* 'big', Dagur *budun*; Ma *bedun* 'big'; OTk *bädük* 'big'. To this group we can add pJ **puya-i/-sa-* 'swell (vi/vt)' < **puda-* and **putwo-* 'fat; mighty'.

One etymology (from Poppe 1960:38) indicates an Altaic **l* rather than **r*:

4) BURN *¨nwuT-* vi 'get scorched' : pA **nöl-* > Mg *nölüge* 'a flame'; Tg Evenki *nul-* 'make a fire', Lamut (Even) *nulul-* 'to flame' and *nurī* 'a flame' [the *r* is unexplained]; OTk *yal-* 'burst into flame' (Tsintsius 1:609b), Yakut *sal-* < **yal-* 'burn, scorch' (Kim Tongso 1981:126). To those we can add J *ni[y]e[y]-* < pJ **ni(-)da-Ci-* 'get cooked' and J *niyas-* < pJ **ni(-)da-sa-* 'cook it'. Starostin 1991:72 adduces to his pA **nole* 'flame; set on fire' the Middle Japanese *norosi* 'smoke signals' (he glosses the word as 'bonfire') but that seems unlikely to be cognate.

The following etymology may also indicate **l* in the proto-form:[24]

5) LISTEN *tuT-* vt 'listen, hear; heed; (= *math-*) smell' : Mg *čingla-* < **tĭngla-* 'listen', Buryat *šagna-* < **čingna-*, Oirot *tĭngda-*, Khalkha *?tĭngna-*, ? Khalkha *čagna-*; OTk *tĭngla-* 'listen'; cf Poppe 1960:71. But the final syllable may be a separate morpheme, marked by a hyphen in the proto-Altaic form given by Street 1974:28 as **tĭng-la-*, and we should not overlook the fact that the Chinese word for 'listen' is *tīng* < *thiəng* (with the addition of a particle, even *tīngle*!) – cf Clauson 1972:522a. Also to be explained are these words for 'listen': Tg *dōldī-*, Manchu *donji-* = Jurchen *dondi-*; Mg *duula-*; cf Tk *t/duy-* 'perceive, notice, hear'. Cf Starostin 1991:48.

3.3. Evidence for the lenition of t > [r], rather than the fortition of [r] > t, can be found in lexical items. The modern word for 'order' **chalyey** < *ˇcho ˇlyey* (1527 Cahoy 1:34a=18b) is written as if the second syllable were from *ˇLYEY*, but the word is from *ˇCHO-ˇTTYEY* (1447 Sek 19:8b, ~ *ˇlwo* 19:28b). Other examples: **molan** < *mwolan* (1576 [1]Yuhap 1:7b) for **motan** < *¨MWUW-TAN* 'peony' and **tōlyang** < *¨TWO-LYANG* (1496 [1]Yuk 2:4a) for **tōc[y]ang** < *TWO-TYANG* (1632 Kalyey 5:22a) < *¨TWO-TTYANG* 'seminary'; for these words see Martin 1992:57-8, where mention is made of the 1103 Kyeylim transcription *"ma-ti"* (#161 *MA-ˇTTYEY*) for *maˇli* = *meˇli* 'head'. The dialect word **nalak** 'rice plant', attested as *nalak* in 1588 (LCT 1964:132a), is probably a diminutive of *¨nat* (?= *¨naT* < **naˇtʷ*) 'grain' made with the suffix *-ᵊlak*.[25] Vos 1963:42 says **pwonti** < *pwonˇtoy* (1481 Twusi 10:10b) 'originally' is from *¨PWON-LOY* (1447 Sek 9:19a, 19:19b; 1449 Kok 18), and that would show the contrary development *l* > *t*, but I think this is wrong and the etymology should be *¨PWON* + *ˇtoy* 'place, circumstance'. Although *pwonˇtoy* is used as an adverb to translate the Chinese word *¨PWON-LOY* it also occurs followed by the

particle *ˈlwo* (and also *ˈlwo k*), like an adverbialized noun, while the Chinese word is always adverbial, though it can be adnominalized with the particle *s*, as can certain other adverbs (Martin 1992:767a).

The proper pronunciation of the Korean name for Khitan, hardly a household word, seems to be unsettled. From Kim Minswu 1961:77b I assume a Korean version ?/kul-tan/ (*'KULQ-TAN*), so that **kul-[t]an** would be a conceivable reduction, and that lets us sidestep the question of lenition. LHS 1961 has **kultan** /kulttan/ cross-referred to **kul-an** (the main entry). He also lists **kelan** and **kyeytan**. Apparently the reading **kul** is taken from an explicit Chinese note found in 1528 Cahoy 1:18v=1:35a [LKM's index misprinted that as "1:35b"]. On the other hand, Wmk cross-refers **kultan** to **kelan** (its main entry). All these attempts to pronounce the Chinese characters smack of artificiality. I would be happy with the user-friendly reading **kyeytan**, and both LHS 1961:180b and Wmk 266b offer that variant, so I must not be the only weary student to choose the easy way out. The Japanese version *kittan* follows the specialized reading that comes from the entering tone (MCh *-t* = MK *-LQ* = J *-t(u)*), but the preferred version of the name seems to be *kitai*, to judge from Nkd and other sources.

4. The p-irregular stems

4.0. The group of **p**-irregular (*-W-*) stems includes 20 of one syllable and a large number of two or three syllables, but almost all of the longer stems incorporate the bound adjective stem *-(ㅸ)W-* = *-(ㅸ)p-/-(ㅸ)w-* < **-(ㅸ)ˈpo-* (probably a reduction of *ˈpwo-* aux 'seem, look like' < vt 'see, look'), as do a few monosyllabic stems too, notably *muyW-* = *muyp-/muyW[u]-* < **muy-pu-* adj 'be hateful' and *moyW-* = *moyp-/moyW[o]-* < **moypo-* (?< **ˈmoy* = *ˈmay* 'whip' + *-pㅸ-*) adj 'be intense; be intrepid, brave; be pungent, peppery-hot'. If we set aside those stems, including the slightly irregular *ˈchiW-* 'be or feel cold' from **ˈchu-*, an isotopic variant of *ˈcho-* 'be cold' + **-(ㅸ)ˈpo-*, there are eight of the shorter stems, all low in accent type:

¨iW- = *¨ip-/iˈW[ㅸ]-* < **iˈpㅸ-* adj 'be confused, distressed, dazed, weary', vt 'confuse, get confused at'

¨kiW- = *¨kip-/kiˈW[ㅸ]-* < **kiˈpㅸ-* vt 'sew (up), patch, mend'

¨teW- = *¨tep-/teˈW[u]-* < **teˈpu-* adj 'be warm/hot'[26]

¨kwoW- = *¨kwop-/kwoˈW[o]-* (also *kwoˈ[Wo]-*) < **kwoˈpo* adj 'be pretty/attractive, be likable/lovable'

¨twoW- = *¨twop-/twoˈW[u]-* (also *twoˈ[W]-*) < **twoˈpo-* vt 'help'

¨kwuW- = *¨kwup- / kwu˙W[u]-* (also *kwu˙[Wu]-*) < **kwu˙pu-* vt 'bake, roast'

[¨]koW- = *[¨]kop- / ko˙W[o]-* < **ko˙po-* vi 'stagnate' (kōy-)

muyW- = *muyp- / muyW[u]-* < **muy-pu-* adj 'be hateful'

moyW- = *moyp- / moyW[o]-* < **moypo-* adj 'be intense; be intrepid, brave; be pungent, peppery-hot'

nwuW- = *nwup- / nwuW[u]-* (> *nwuwu-*), *nwu[w]-* < **nwupu-* vi 'lie down'

-¨zoW- = *-¨zop- / zo˙W[o]-* < **-zo˙po-* < **-ᵘ⁄ₒso˙po-* bound auxiliary (deferential)

The deferential is a bound stem that displays sibilant lenition (§5.0) in its onset and labial lenition in its coda. It is the source of the modern stylizer **-(s)up- / -p-**, which is always followed by a consonant. The deferential is thought to be a compound made up of a truncation of the (subject-exalting) honorific *-ᵘ⁄ₒ˙si-* + a subject-humbling auxiliary *-W-* (reflected in the modern **pōyp-/pōyw-** 'humbly meet' < *¨pwoy-* < **pwo-˙i-* 'get seen'), probably with the same source as *-W-* 'seem, look like'.[27] The Middle Korean voiced fricative *-W-* soon developed into the semivowel *-w-* and combined with the epenthetic vowel *ᵘ⁄ₒ* to create new instances of the rounded vowels *wu* [u] and *wo* [o]. The Yale Romanization permits us to treat the components as separate segments *w-u* and *w-o* for purposes of morphological analysis and thereby enabled Martin 1954 to call this group of stems "w-verbs", making the same kind of analysis of the modifier **tow-ulq** < *two˙Wulq* as of the infinitive **tow-a** < *two˙Wa*. The gerund form is **tōp-ko** < *¨twop˙kwo*. The revealing spelling of *two˙wo˙m i* (1463 Pep 2:117a) for *two˙Wwo˙m i* (?1468- Mong 9b) attests an early elision of *W* for stems of the shape *CwoW-* or *CwuW-*. The other examples of those shape types are *¨kwoW-* adj 'be pretty', *¨kwuW-* vt 'bake', and *nwuW-* vi 'lie down'. The same elision is found also in such spellings of the infinitive as *two˙a* (Martin 1992:234) and *nwu˙e* (1462 [1]Nung 4:37b, ?1517- Pak 1:42b) = *nwu˙we* (1481 Twusi 16:4b, 1482 Nam 1:40a) < *nwu˙We* (1447 Sek 23:44b, 24:26a). The stem *nwuW-* 'lie down' is peculiar in that the stem forms are always Low, so that we reconstruct the basic shape as all-low *nwupu-* rather than the canonically expected **nwu˙pu-*. That accentual peculiarity calls for some explanation. A few dialects in Hamkyeng and Kangwen lack rounding in the first syllable (**nup-** for **nwup-**) and this may account for the oddity: the earlier forms then would be **[¨]nuW-* = *nup- / *nu˙W[u]-* < **nu˙pu-*, easier to compare with J *ne[y]-* < pJ **na-Ci-* but less congenial with pMg ?**nob-*

'sleep'[28]. The suppression of the initial rise is expected for shapes of the type *C$^{u}/_{o}$C* as shown by *[¨]koW-* 'stagnate' above (*[¨]kop ˙kwo*) and by *tuT-* hear' and *toT-* 'run' (§3.0). In view of the proposal that the minimal vowels in those two stems were reduced from more robust ancestors, we can ask whether, though otherwise unneeded, a similar hypothesis may hold for *[¨]koW-* and **[¨]nuW-*. Modern cwūw- 'pick it up' is a reformation of the MK stem *¨cwuz-* (§5.0)

4.1. The 15 one-syllable *---lW-* stems are intrinsically trisyllabic, and all are Low *¨---lp- / ---l ˙W-*, like *¨tulW- = ¨tulp- / tul ˙W[u]- < ?*tul ˙pu-* (?/ *?*tol ˙po-*) < **tu ˙lu ˙pu-* 'pierce' and its variant *¨twulW- = (*¨twulp- /) twul ˙W[u]- < ?*twul ˙pu- < *twu ˙lu ˙pu-*. But four stems display the initial rise in ALL forms, and that is evidence that they are compressed from 4-syllable shapes:

¨ptelW- = ¨ptelp- / ¨ptel ˙W[u]- < ?¨ptel ˙pu- < *¨pte ˙lu ˙pu-* (*?< *pu ˙te ˙lu ˙pu-*) adj 'be puckery, astringent'

¨pthelW- = ¨pthelp- / ¨pthel ˙W[u]- < ?¨pthel ˙pu- < *¨pthe ˙lu ˙pu-* (*?< *pu ˙the ˙lu ˙pu-*) adj 'be puckery, astringent'

¨skelW- = ¨skelp- / ¨skel ˙W[u]- < ?¨skel ˙pu- < *¨ske ˙lu ˙pu-* (*?< *su ˙ke ˙lu ˙pu-*) adj 'be difficult'

¨syelW- = ¨syelp- / ¨syel ˙W[u]- < ?¨syel ˙pu- < *¨sye ˙lu ˙pu-* (*?< *su ˙ye ˙lu ˙pu-*) adj 'be sad; be sorry; be embarrassed'

There are also three stems that do not show the rise at all, but that may be because the appropriate forms are unfound in the dotted texts:

*elW- = *¨elp- / el[¨]W[u]- < ?*¨el ˙pu- < *e ˙lu ˙pu-* (*?< e ˙lu-* vt + **- ˙p$^{u}/_{o}$-*) adj 'be charming, lovable, attractive'

*molW- = *¨molp- / mol[¨]W[o]- < ?*[¨]mol ˙po- < *mo ˙lo ˙po-* adj 'be heartbreaking; be heartbroken'

*pulW- = *¨pulp- / pul[¨]W[u]- < ?*[¨]pul ˙pu- < *pu ˙lu ˙pu-* (*< pu(l)-/pul[u]- < *pulu- + - ˙p$^{u}/_{o}$-*) adj 'be envious, jealous'

The form *pulp.ti* is reported from 1800 Hancwung (p.372) but that is well after Korean scribes stopped marking the accent.

The other *¨---lW-* stems are the four verbs *¨kolW- = ¨kolp- / kol ˙W[o]- < ?*kol ˙po- < *ko ˙lo ˙po-* 'line it/them up, compare', *¨polW- = ¨polp- / pol ˙W[o]- < ?*pol ˙po- < *po ˙lo ˙po-* 'tread', *¨solW- = ¨solp- / sol ˙W[o]- < ?*sol ˙po- < *so ˙lo ˙po-* 'humbly say, tell to a superior, report' (> **saloy-**), and also the two adjectives *¨helW- = *¨help- / hel ˙W[u]- < ?*hel ˙pu- < *he ˙lu ˙pu- ?< * ˙hel ˚ho- ˚pwo-* (*< ˙HELQ*) 'be easy/apt (to do)' and **[¨]tyalW- < *[¨]tyelW- ?< *ty$^{e}/_{a}$ ˙lo ˙po-* 'be short / fine' (= **[¨]tyalG- / tya[¨]lo- ↔ [¨]tyelG- / tye[¨]l[$^{u}/_{o}$]- < *ty$^{e}/_{a}$ ˙lo ˙ko-*) and a later variant **cyelW- / cyelG- ?< *ty$^{e}/_{a}$ ˙l$^{u}/_{o}$ ˙p$^{u}/_{o}$-*,

only attested as *cyelGun* (1775 Yek-po 10a), which ought to be **cyelun* if it is from a variant of *[¨]tyelG-/tye[ˑ]l[ㅡ]-* < **tyᵉ/aˑlㅡˑkㅡ-*.

4.2. There are 12 regular one-syllable stems that end in *...p-* and the only one that does not begin with low pitch is *ˑspwop-* 'extract, pull out', which must come from **soˑpwop-* and probably contains the intensive prefix *s(ㅡ)-*. The other stems are intrinsically monosyllabic, unlike the *-W-* stems, because they lack a rising accent. A list:

cap- vt 'catch, take, hold'
cyep- vt 'give as an advantage, be generous (of oneself)'
ep- vt 'shoulder it, bear'
nep- adj 'be wide/broad' (= *nelu-*) ?< **nelup-*
cip- vt 'pick up'
nip- vt 'wear; bear, undergo'
(s)sip- vt 'bite'
cwop- adj 'be narrow'
kwop-$_1$ adj 'be bent'
kwop-$_2$ vi 'double, get doubled'
ˑspwop- vt 'extract, pull out'
kwup- vi/adj 'get/be bent'

4.3. There are ten shorter stems of the type *¨...m-/...ˑm[ㅡ]-* < **...ˑmㅡ-*, intrinsically dissyllabic and low in accent:

¨kam- = *¨kam-/kaˑm[o]-* < **kaˑmo-*$_1$ vt 'wind it, wind around'
¨kam- = *¨kam-/kaˑm[o]-* < **kaˑmo-*$_2$ adj 'black, dark'
¨nam- = *¨nam-/naˑm[o]-* < **naˑmo-* vt 'leave (behind), let it remain', vi (= *¨nem-/neˑm[u]-*) 'exceed, surpass, be more than'
¨sam- = *¨sam-/saˑm[o]-* < **saˑmo-* vt 'make (it into ...)'
¨tam- = *¨tam-/taˑm[o]-* < **taˑmo-* vt 'fill it, pack it'[29]
¨kem- = *¨kem-/keˑm[u]-* < **keˑmu-* adj 'black'
¨nem- = *¨nem-/neˑm[u]-* < **neˑmu-* vt 'cross, go over; exceed, go beyond' (cf *¨nam-/naˑm[o]-* < **naˑmo-*)[30]
¨cyem- = *¨cyem-/cyeˑm[u]-* < **cyemu-* adj (> *cyelm-* 1775 Yek-po 19a > *celm-* Gale) 'be young':
[¨]pum- = *[¨]pum-/*puˑm[u]-* vi 'relate (to), be relevant (to)'
¨soym- (?= *¨soym-/*soyˑm[ㅡ]-* < **soyˑmㅡ-*) vi 'spring/spurt up'

The last two stems are poorly attested. The verb stem *¨soym-* is probably from the noun *¨soym* 'a source, a (well)spring', and that is probably derived from the modulated substantive of *ˑsoy-* 'leak' (see also n. 32). The stem *[¨]pum-/*puˑm[u]-* is attested only in *pumˑti* (1459 Wel 23:87-8), a form overlooked by the most recent Middle

Korean dictionary (Wmk) but carried in an older one (LCT 1964). This is perhaps an aberrant version of (or is a mistake for) **phwum˙ti* 'embrace' from a stem **˙phwum-* that is attested only in the infinitive *˙phwu˙me* and is derived from *˙phwum* 'bosom', which may derive from the modulated substantive of *˙phu-* 'bloom; spread/extend it'.[31]

The eight intrinsically monosyllabic *˙---m-* stems (in addition to **˙phwum-* 'embrace') are High: *˙spum-* = *˙spwum-* = vt 'make/let it spurt; sprinkle it', *˙swum-* 'hide oneself, lurk'; *˙chom-* 'bear, endure, stand', *˙com-* 'sink; get soaked/steeped/dyed', *˙tom-* 'get soaked/drenched/steeped',[32] *˙kom-*$_1$ 'bathe; wash (hair), shampoo', *˙kom-*$_2$ (*˙nwun* ~) 'close (one's eyes)'.

In addition we find eight stems of the type *¨---lm- / ---l˙m[ʷ/o]-* < **---l˙mʷ/o-*, and they are intrinsically dissyllabic:

¨kalm- / kal˙m[o]- < **kal˙mo-* vt 'store/safekeep it, hide it away'
*[˙]˙palm- / *pal˙m[o]-* < **pal˙mo-* vt 'measure it off in spans'
*¨talm- / *tal˙m[o]-* < **tal˙mo-* vt 'spread (disease)'
¨telm- / tel˙m[u]- < **tel˙mu-* vi 'get stained/dyed'
¨kwulm- / kwul˙m[u]- < **kwul˙mu-* vi 'hunger, go without food'
¨solm- / sol˙m[o]- < **sol˙mo-* 'boil' vt
¨wolm- / wol˙m[o]- < **wol˙mo-* vi 'move', vt 'move (one's abode)'
[¨]kwolm- / kwol˙m[o]- < **kwol˙mo-* vi 'fester' cf *¨kwolq-* vi 'fester' (= *[¨]kwolm-*)

There are only three stems of the type *¨---n- / ---˙n[ʷ/o]-* < *---˙nʷ/o-*, and they are *¨an- / a˙n[o]-* < **a˙no-* vt 'hug, embrace' (probably < *˙an[h]* 'inside'), *¨sin- / si˙n[ʷ/o]-* < **si˙no-* vt 'wear it as footgear' (< *˙sin* 'shoes'), *¨ten- / te˙n[u]-* < **te˙nu-* vt 'wager, bet' (< ?).

5. The s-irregular stems

5.0. The group of s-irregular (*---z-*) stems consists of about 20 shorter stems. Of the four longer stems, only one (now obsolete) is not transparently a compound: *ilpez-* = *ilpes- / ilpez[u]-* < **ilpesu-* vt 'steal, rob'. An etymology eludes me, but I suspect that it contains *pes-* 'remove; doff; shed' and that the first syllable is related to *ilh-* 'lose' (cf *˙QILQ* 'lose, let escape'). The prospective modifier is still further eroded in one text: *ilGwe˙zol* (1527 Cahoy 3:11a=25a) = *ilpe˙zul* (~ *˙ss i˙la* 1463 Pep 2:167b). In writing the stem without dots I follow what seem to be the most reliable attestations of forms: *ilpe˙zul ˙ss i˙la* (1463 Pep 2:167b), *ilpe˙zu˙m ye* (1459 Wel 21:40b), *ilpe˙zwu˙m ul* (1459 Wel 1:45b). Two oddly accented examples may be misdotted: *il¨pes.no˙ta* (1481 Twusi 6:42a), *il˙pes˙ti* (1481 Twusi 21:35a).

5.1. The shorter ···*z*- stems are mostly low in accent, and the rise is attested for the compressed form, as can be seen in these representative verbs:

¨az- = *¨as-/a˙z[o]-* < **a˙so-* vt 'grab'

¨cez- = *¨ces-/ce˙z[u]-* < **ce˙su-* vt 'stir (up)'

¨ciz- = *¨cis-/ci˙z[ㅡ]-* < **ci˙sㅡ-* vt 'make'; *nye˙lum* ~ 'farm'; *˙kul* ~ 'write, compose'

¨cwoz- = *¨cwos-/cwo˙z[o]-* < **cwo˙so-* vt 'peck; (*me˙li* ~) kowtow; carve'

¨cwuz- = *¨cwus-/cwu˙z[u]-* < *cwu˙su-* vt 'pick it up' (the stem was later restructured as cwūw-)

¨wuz- = *¨wus-/wu˙zu-* < **wu˙su-* vt 'laugh, laugh at' (the stem was later restructured as wūs-)

The stem *[¨]mwuz-* = **[¨]mwus-/mwu˙z[u]-* < **mwu˙su-* vt 'put together, build, make' is not attested in a form that would call for the compression, such as **¨mwus˙kwo*. It is unclear what connection this stem has with *mwusk-* vt 'bundle it, make it into a bundle', which may come from a noun *(˙)mwus*, attested only as the counter for bundles: *¨sey mwu˙s ul* (1459 Wel 8:99b) 'three bunches', *hon ˙mwus ˙kwom* (?1517- [1]No 1:12a) 'one sheaf each'.

One stem that has a minimal vowel for its nucleus is unattested in a form calling for the compressed shape, so we do not know whether such a form would show the initial rise as suppressed:

¨koz- = **¨kos-/ko˙z[o]-* < **ko˙so-* < **ko˙co-* (see n. 51-2) vt 'cut'

But a riming stem is attested with the initial rise intact:

¨toz- = *¨tos-/to˙z[o]-* < **to˙so-* vt 'love'

For that reason, I am not bracketing the double dot of *¨koz-*, and I assume that the gerund would be *?¨kos˙kwo*, not *?*[¨]kos˙kwo*, if it were attested. Another riming stem is unattested in the 15th century, so I assume it would have had the double dot, put in brackets because of a 16th-century attestation that is probably misdotted:

[¨]coz- = *[¨]cos-/co˙z[o]-* < **co˙so-* vt 'spin (thread)': *cos.ta* (1775 Yek-po 39b), *co[˙]zol* (1527 Cahoy 3:8b=19a).

Two homophonous stems (etymologically identical?) are always Low so the second syllable is never marked with the accent dot:

puz- = *pus-/puz[u]-* < **pusu-*$_1$ vt 'pour' – cf Ma *fusu-* 'sprinkle, spray', Even *hüsï-*, Negidal *husi-*, Evenki *posō-* < pTg **pösü-* (Tsintsius 2:355a), pMg **püsür-* (Poppe 1960:11, LKM 1958:111)

puz- = *pus-/puz[u]-* < **pusu-*$_2$ vi 'swell'

For both stems the prospective modifier is *puzul*.

And the stem ***muz-*** = ***mus-*** / ****muz[u]-*** < ****musu-*** vi 'break, collapse' is attested only in the one form ***mus-˙tos*** (1482 Kum-sam 2:1b). That led the lexicographers to put it with the regular ···***s***- stems, like ***sis***- vt 'wash' and the accentually anomalous ***˙sus***- vt = ***˙suc***- 'wipe'. There is no good reason not to follow them on this point, but I suspect that undiscovered evidence may yet turn up to validate the infinitive as ****mu˙ze***.

5.2. Of the 6 regular ***s***-stems and the 25 ***c***-stems only three carry the High accent: ***˙sus***- = ***˙suc***- 'wipe', ***˙pcuc***- 'tear it', and ***˙choc***- 'seek'. The last two stems may have been a syllable longer in proto-Korean: ****pu˙cuc***- and ****co˙hoc***- or ****co˙koc***- (cf Japanese *sagas*- 'seek', Martin 1966:236 #131). In view of modern **ssis-** (dialect **ssich-**), an earlier version of the first stem perhaps carried the intensive prefix ***s(ᵘ⁄₀)***-, so that it too was the result of syncope: proto-Korean ****sᵘ⁄₀˙suc***- (cf Japanese *sosog*- < *susuk*- 'rinse' interestingly with the High register). Why was the high pitch of the second syllable lost without a trace, and not blended with the first-syllable low pitch to create the initial rising contour we find in stems of the shape ··· ***˙Cᵘ⁄₀***-? Because the syncope was at the beginning of the dissyllable rather than at the end. The five other ***s***-stems are ***pas***- vt 'doff', ***pes***- vt 'doff', ***pis***- vt 'comb (one's hair)', ***sis***- 'wash', ***swos***- vi 'rise up, soar; spurt out'.

The stem ***is(i)***- 'be, stay' is a contractile dissyllabic vowel stem.[33] The full stem is found in ***isi-lq*** (1447 Sek 6:7a) – written ***I-˙SSILQ*** in 1103 Kyeylim (#346), ***isi-˙m ye*** (1447 Sek 6:34b), ***isi-n*** (1459 Wel 8:96b). It was shortened to ***isy***- before a vowel: ***i˙sy-e*** (1447 Sek 6:4ab) = ***i˙sy-a*** (1449 Kok 135), ***i˙sy-wo-m*** (1459 Wel 7:31a) = ***i˙sy-wu-m*** (1459 Wel se:5a). It was further shortened to ***is***- before ***k***, ***t***, and the processive bound auxiliary ***-(˙)no***-: ***is˙kwo*** (1445 [1]Yong 37), ***is-˙kuy*** (1447 Sek 9:5b) = ***is-˙key*** (1459 Wel 8:22b); ***is-˙ta*** (1447 Sek 13:7b), ***is-˙ti*** (1447 Sek se:2b), ***is-˙te-n*** (1447 Sek 24:44a); ***is-no-n*** (1447 Sek 6:43b), ***is-˙n[o]-˙wo-n*** (1447 Sek 9:24a). For Middle Korean alone it would be possible to posit as basic a consonant-coda stem ***isy***- and explain the ***isi***··· forms as ***isy-u***···, with the lacking syllable /yu/ automatically replaced by /i/. But the stem shape would be unique, in any event. And it would require us to explain dialect forms such as those like Phyengan **isi-ko** (see Martin 1992:583a) as some kind of restructuring rather than a preservation of the pre-MK unshortened form. The Phyengan use of the shortened form **is-** is optional before a voiceless consonant (**isi-ta** or **is-ta**) and probably before the processive (**?isi-nu-n** or **is-nu-n** = **/innun/**), though that is unclear from the data

available. The longer option **isi-** must be the older, for there would be no motivation for it to develop from **is-**. In the central area the shape was restructured as a consonant stem standardized by the post-1933 orthography as **iss-**. The ss is heard as such only before a vowel (**iss-e, iss-ul, iss-una**), before a consonant both ss and s are reduced to the most similar coda permitted by the syllable structure: **iss-ko → it-ko** = **/itkko/ → /ikko/, iss-ta → it-ta** = **/it.tta/ → /itta/, it-nun** = **/itnun/ → /innun/**. The modern Seoul bound auxiliaries **-ᵉ⁄ass-** (past) and **-keyss-** (future) incorporated a shortened version of **iss-** and are treated the same way.

A synonymous stem ***'si-*** is listed by LCT 1964. It is an apheretic variant of ***is(i)-*** (usually as auxiliary) that occurs after a vowel in certain structures, as a further optional reduction of ***'ys(i)-***, e.g. following the infinitive in ***-ˑᵉ⁄a 'ysˑta*** 'is done, has done' (= **-ᵉ⁄a iss.ta**), also ***-ˑᵉ⁄a 'sˑta***, which came to have the simple past meaning 'did' (= **-ᵉ⁄ass.ta**) rather than the perfect-resultative 'has done'.

6. Middle Korean stems ending in /G/

6.0. The Middle Korean phoneme ***/G/*** surfaced only after ***l***, ***y***, ***i***, or ***z***. Unlike ***W*** and ***z*** it was not assigned a separate symbol but was written with a device, a kind of graphic juncture, whereby a final ***l*** or ***z*** was restrained from becoming the onset of a following vowel-initial syllable, as other consonants did automatically when the two syllables were tightly joined. After ***i*** (and usually ***y***) a parasitic ***y*** was written into the onset of the following syllable in the normal case, so that the absence of the expected ***y*** signals the occurrence of a ***/G/***. Some cases of the spelling result from reducing ***W*** (lenited ***p***) and certain forms are variously spelled with ***Wᵘ⁄o***, ***Gwᵘ⁄o***, ***Wwᵘ⁄o***, and ***wᵘ⁄o***. These reflect stages of the development of the lenited ***pᵘ⁄o*** into the modern **wu**. But most cases of ***/G/*** represent a lenited velar and reflect the preliminary weakening of a ***/k/*** on its way to total erosion in the central language.

6.1. There are 31 stems of the shape ***...lG-/...lᵘ⁄o-*** < ****...lᵘ⁄ok-*** and a number of them contain the bound auxiliary ***-G-*** < ****-k-*** that derives causatives, such as ***salG-/salo-*** < ****saloG-*** < ****salo-k-*** vt 'let one live' from ***¨sa(l)-/saˑlᵘ⁄o-*** < ****saˑlᵘ⁄o-*** vi 'live', ***kilG-/kilᵘ⁄o-*** < ****kilᵘ⁄oG-*** < ****kilᵘ⁄o-k-*** vt 'raise, grow' from the adjective ***¨ki(l)-/kiˑlᵘ⁄o-*** < ****kiˑlᵘ⁄o-*** 'be long', and ***ilG-/ilᵘ⁄o-*** < ****ilᵘ⁄oG-*** < ****ilᵘ⁄o-k-***$_1$ vt 'create, bring it into being' from ***¨i(l)-/iˑlᵘ⁄o-*** < ****iˑlᵘ⁄o-*** vi 'form, take shape; arise, happen'. The last verb, rather than proto-Altaic ****il***$_2$

'work',[34] is the immediate source of *¨il* 'event; fact; work'. The bound auxiliary is found unlenited in stems of the shape *...mk- / ...mʷ/o-* < **...mʷ/ok-* such as *tomk- / tomo-* < **tomoG-* < **tomo-k-* vt 'soak it' (> **tamku-**) from *˙tom-* vi 'get soaked/drenched/steeped', which loses its High accent, as happens for all one-dot stems when they attach the various formants to make derived stems, which typically begin low.

6.2. The *...lG-* stems are one source of the "l-doubling stems" of modern Korean: *wolG- / wolo-* < **woloG-* < **wolok-* 'go up' > **oll- / olu-**; *kalG- / ka˙lo-* < **ka˙loG-* < **ka˙lok-* 'divide, split' > **kall- / kalu-**. The other source is the 11 stems of the type *...lʷ/ol- / ...ll-* with compression of a dissyllable: *hulu- / hull-* < **hulul-* 'flow' > **hull- / hulu-**; *molo- / moll-* < **molol-* 'get dry' > **mall- / malu-**. Nine of the eleven stems are all-low **CʷoCʷo-*, with minimal vowels, and two are shaped **CwʷoCwʷo-*: *nwu˙lu- / ¨nwull-* < **nwu˙lul-* vt 'press (down); oppress', *mwo˙lo-/¨mwoll-* < **mwo˙lol-* 'not know'.

6.3. Three stems have the shape *...zG- / ...zʷ/o-* < **...zʷ/oG-* < **...sʷ/ok-*, namely *pizG- / pizu-* < **pizuG-* < **pisuk-* vt 'embellish, decorate', *kuzG- / kuzu-* < **kuzuG-* < **kusuk-* vt 'pull; draw a line', *pʷ/ozG- / pozo-* < **pʷ/osʷ/oG-* < **pʷ/osʷ/ok-* vt 'crush, smash' – cf Tk *bu:z-* 'destroy', Chuvash *pusar* 'crush', Mg *but nerge-* 'smash into pieces', pTg **poso-* (Kim Tongso 1981:26 but he fails to state the forms from which he reconstructs; they probably include Ma *feser seme* 'broken into small pieces' and perhaps *efule-* 'break/destroy it' and *efuye-* 'be broken/destroyed'). Here we assume a lenition both at the end (**k* > *G*) and in the middle (**s* > *z*). And, as in §6.1, we need the **...G-* stage to account for the alternant shape *...u-* = *...u[G]-*, though that elision is automatic, given the restricted environments permitted for Middle Korean */G/*. This phoneme, once brought into existence by the lenition of **k*, absorbed certain examples of */W/* which had been further weakened by delabialization and in which the phoneme was eventually elided along with lenited-velar cases of */G/*.[35]

The lenition in the three stems shaped *...zG- / ...zʷ/o-* < **...zʷ/oG-* < **...sʷ/ok-* is outside the "predictable" environment of LOW...*˙Cʷ/o-* and that calls for us either to redefine the environment or to assume a flattening of the canonical rise in *?*ku˙suk-* (etc); the latter idea may be supported by the accent of the substantive-derived noun *ku˙zum* 'limit, demarcation'. These three stems may be the result of attaching a suffix to a monosyllabic root: *pizG- / pizu-* < **pizuG-* < **pisuk-* 'embellish' probably contains *˙pich* 'light, brilliance; color' (?< **˙picʷ/ok*), but I have not found a similar clue for *pʷ/ozG- / pozo-* <

pʷʌsʷʌG-* < **pʷʌsʷʌk-* vt 'crush, smash'. The stem ***kuyzi-* is a development from ***kuz˙Gi-*** '(1) get pulled; (2) hide it', which is from ***kuzG- / kuzu-*** < ****kuzuG-*** < ****kusuk-*** vt 'pull', as is ***ku˙zi-*** 'hide it' (without the anticipatory palatalization of the first syllable). The noun ***ku˙zey*** 'secluded place, nook', the source of **kwusek** 'corner' (note the /s/), is from ***kuzu-ngek (˙ey)*** '(in) a hidden place'; cf the placenoun ***ku-ngey*** 'there' < ***ku-ngek (˙ey/˙uy)*** '(in) that place', the source of **keki**. The noun ***ku˙zey*** is perhaps better translated as 'private place' in the one passage where it occurs: ***ku˙zey moyng˙konwo˙la cip ci˙zi ˙lol ˙chozom ho˙n i*** (1459 Wel 1:44a-b) 'wanting to make (it) a place of their own they started building a house'. The word seems to be related to the adjectival noun **kuuk** < ***kuzuk*** 'secluded, secret, private', which looks like an adverb formed with the suffix ***-(u)k*** attached to ***(kus) kuzG- / kuzu-*** 'draw a line [around ⋯], delimit'; cf ***ku˙zum*** 'limit, demarcation' from the substantive.

6.4. No stems have shapes like ***⋯yG-*** < ****⋯yʷʌG-*** < ****⋯yʷʌk-*** (the syllables represented by ***yʷʌ*** did not exist in Middle Korean), nor were there any with shapes like ***⋯VG- / ⋯Vʷʌ-*** < ****⋯Vʷʌk-***. But an elided ***G*** is perhaps lurking in such stems as ***tao-*** 'get exhausted, come to an end' ?< ****ta[G]o-*** ?< ****tako-*** and ***teu-*** 'increase' ?< ****te[G]u-*** ?< ****teku-***. The phonogram ˙***TUK*** 'get' is used in 1103 Kyeylim (#358)[36] to write ¨***ta*** 'all' < ***ta[o]-˙a*** 'exhaust', and ***takoy*** 'all' appears in 1576 [1]Yuhap 1:20a. But the Chinese final stops in Kyeylim are often questionable; see n. 39.

7. Onset lenitions

7.0. Lenition at the beginning of morphemes is most prominent with certain particles and endings. As said in Martin 1992:53-4:

> The susceptible particles and endings mostly have velar initials (***-k⋯*** → ***-G⋯***), but notice also the bound stem ***-¨zoW-*** (deferential), source of the modern **-sup-** that marks the formal style, and the particle ˙***za*** 'precisely, only (if)', still said **(i)sa** as a dialect version of Seoul **(i)ya**, which comes from attaching that particle to the nominative marker ˙***i***, then eliding all cases of ***-z-*** so that ˙***i˙za*** became ***ia***, which inserted the glide heard in **iya**. Elsewhere it is proposed that the copula forms **ila** and **(?)iley** are lenited versions of **i-ta** and **i-tey**.

To that we can add (Martin 1992:57) the particle ***pu˙the*** '(starting) from' which usually stays intact but lenites to ··· ***Gwu˙the*** in two or three examples from the early 1600s, and the unusual lenition of an adverbialized adjectival noun ***˙kot ˙hi*** used as a quasi-particle: ***˙nol[h] ˙[G]o˙t hi*** (?1517- [1]No 1:12b) 'like a blade'. No verb endings begin with ***p···***, but the bound adjective -***˙pʷo-*** is incorporated in a sizable group of subjective adjectives that end in ···***W-***, such as ***¨swuyW-*** (> **swiw- / swīp-**) 'be easy' from ***¨swuy-*** 'rest'. And the verb ***pat-*** 'butt' becomes -***˙Wat-*** > -***˙Gwat-*** > **-wat-** to derive a few intensive stems: ***koli-˙Gwat-*** 'conceal', ***nilu-˙Gwat-*** 'raise', ***ta-˙Gwat-*** < ****ta[h]-pat-*** 'approach; defy', ***mulli-˙Gwat-*** 'spurn; repel', ***penguli-˙Gwat-*** 'crack / split it', ***˙thi-Gwat-*** 'push up against', ***wuy-˙Gwat-*** 'lift up'.

Other verb stems sometimes occur with a lenited initial when they serve as the later member of a compound: ***mol-[¨]Goz-*** = ****mol-[¨]Gos-/mol-Go˙z[o]-*** < ****mol[o]-koso-*** 'cut out' < ***molG-/molo-*** < ****moloG-*** < ****molok-*** 'cut out' + ***¨koz-*** = ****¨kos-/ko˙z[o]-*** < ****ko˙so-*** 'cut'; ***selGec-*** 'remove, tidy it (up); do the dishes' (> 1795 ***selec-***) < ****selkec-*** (> **selkec-**) = ***¨sel-*** vt + ****kec-*** > ***ket-*** (cf LCT 1971:333); ***¨hyey-Ga˙li-*** vt 'consider, ponder; figure out; count' < ***¨hyey-*** vt 'reckon, count; think, consider, figure' + ***ka˙li-*** vi 'branch off' (LCT 1971:319). Attached to a bound root of uncertain origin: ***kwuc-*** adj 'be bad' > ***-Gwuc-*** in ***key-Gwuc-*** adj 'be messy, dirty' (LCT 1971:6, 352), and ***kulG-/kulu-*** < ****kuluk-*** adj 'wrong' in ***key-GulG-/-Gulu-*** adj 'be lazy'. Some of the ···***z***··· words are lexicalized from phrases: ***¨ilza˙ma*** (1462 [1]Nung 6:70b, 1463 Pep 7:159a, 1518 Sohakcho 8:8b) 'indulging in' < ***¨il (˙lwo) sa˙ma*** 'making it one's business'. The stem ***¨wuzW-*** 'be laughable', found in ***¨wuzWu˙l i*** (1445 [1]Yong 16) and ***¨wuz˙Wi*** (1449 Kok 179), has undergone a second lenition (labial) by attaching the leniting bound adjective stem -***˙pʷo-***; the source form must have been ****wu˙su-˙pu-***. The stem ***¨yez˙Gwo-*** (***¨yez˙Gwa*** 1462 [1]Nung 10:41a, ***¨yes˙Gwa*** 9:87b) derives from ****¨yez-˙Wwo-*** < ***¨yes-˙pwo-*** 'spy on' < ****ye˙su-˚pwo-***.

7.1. Compound nouns, too, may show lenition of the initial of the later member, as described in Martin 1992:57:

> Lenition of ***-p···*** in compound nouns: ***tay-¨We˙m ul*** (1445 [1]Yong 87) 'a mighty tiger' < ***¨pem*** 'tiger'[37]; ***phwunglywu-Wa˙ci*** (1459 Wel 24:28b) 'musician' < ··· ***pa˙ci*** 'a professional'; ***kolo-˙Wi*** (1459 Wel 1:36b) 'a fine rain, a drizzle' < ***˙pi*** 'rain'; ***mwosi ˙Gwoy*** = ***mwosi ˙pwoy*** (?1517- Pak 1:51b; in two contiguous

passages) 'ramie cloth' (> **mosi pey**); *ˈpwul ˈGwep* (?1517- Pak 1:74b) = *ˈpwul ˈpep* (id. 1:75b) < *ˈPWULQ-ˈPEP* 'Buddha's Law', *ˈsyel ˈGwep* (id. 1:75a) < *ˈSYWELQ-ˈPEP* 'explaining the Law'. There is even one example of *pye···* > *-Wye···*: *ˈswoy-Wye ˈlo* (1445 [1]Yong 3:13b [Chinese text]) 'Iron Cliff' [placename]. Also, sometimes the final stop of a noun gets elided. Examples that survive in the modern language include **si'-o li** '15 leagues' and **si'-wel** 'October' < *ˈsi-ˈGwe ˈl ey n'* (?1517- Pak 1:18a) < *ˈSSIP-ˈNGWELQ*; Cf **yu'-wel** 'June' < *ˈlywu[k]-ˈwe ˈl uy* (?1517- [1]No 1:27b) = *nywu[k]-wel* (1608 Thay-yo 16a). An elision of noun-final *···p* gives us *ci[p] s* 'of the house' in *ku ci[p] s ˈsto ˈl i* (1447 Sek 6:14a) 'the daughter of that house', *na 'y ci[p] s ke[ˈ]s ul* (?1517- [1]No 2:49a) 'things of my house', *i ˈGwut ˈci[p] s nul ˈku ˈn i* [sic] (id.) 'the old man in the house next door', ...

To that list we can add *ˈtay-Wat* [placename] (1445 [1]Yong 5:26a) < *ˈtay* + *path* 'bamboo field', *ˈkul-ˈWal* (1445 [1]Yong 26) = *ˈkul-ˈGwal* (Sek 9:38a) 'writings' < *kul* 'writing, script' + *ˈpal* 'lines, streaks, impressions' < 'foot(print)', *mal-¨Wam* (1459 Wel 21:80b) = *ˈmal-¨Gwam* (1462 [1]Nung 9:56b) > **malum** 'caltrop' < **ˈmul ¨pam* 'water chestnut'. And *¨twu ˈzeh* 'a few' is from *¨twu[lh]* 'two' + a variant of *¨seyh* 'three'. Modern **kipun** 'feeling, mood' is from Chinese *ˈKHUY-ˈPPWUN* (1463 Pep 2:28a, 2:95b, 2:167a; 1465 Wen 1:2:2:169a, 2:1:1:23b) but in Middle Korean the nativized version appeared lenited as *ˈkuy ˈGwun* (1528 Cahoy 1:1a; *ˈkuyGwu ˈn i* 1482 Kum-sam 3:48b, 1489 Kup-kan 6:48a), and with further erosion that is the source of modern **kiwun**$_1$ 'pep, vigor'. This is not be confused with **kiwun**$_2$ < *ˈKHUY-ˈNGWUN*$_1$ (1447 Sek 13:10b, 19:11b. 19:12a/b; 1459 Wel 1:41b, 8:93b) 'elegance' (with the character RIME) or **kiwun**$_3$ < *ˈKHUY-ˈNGWUN*$_2$ (1481 Twusi 7:12a, 10:42a) 'trend, tendency' (with the character CONVEY/LUCK).

7.2. Onset lenition takes place on certain shapes of inflectional suffixes and incorporated bound nouns; of postmodifiers when ellipsis of the modifier juxtaposes them to nouns of certain shapes; of certain bound auxiliaries; and of certain postnominal particles. Each of the kinds of lenition mentioned earlier can be found in one or more of these categories.

7.2.1. After stem shapes that end in *l*, *z*, *y*, and often *i*, the gerund ending *-ˈkwo* lenites to *-ˈGwo* and the adverbative ending *-ˈkey* (or *-ˈkuy*) lenites to *-ˈGey* (or *-ˈG$^{u}/_{o}$y*). The summative *-ˈki* was little

used in Middle Korean and there seem to be no 15th-century examples for stems of shapes that would call for lenition, except perhaps for *pis ˙Gi ˙ki* (1447 Sek 6:10b) 'make/let one embellish (decorate, adorn)' ← *pis ˙Gi-* = *piz ˙Gi-* ?< **pi ˙ch[wuy]- ˙ki-*. The few 16th-century creations, such as *¨pil ˙ki* ← *¨pi(l)-/pi ˙l[ㅱ]-* < **pi ˙lㅱ-* 'beg; pray; borrow' (1586 Sohak 5:60a), would not be expected to show lenition because of the date. Most modern Korean uses of the summative were handled by Middle Korean with the suspective *- ˙ti*, a development from the incorporated postmodifier *t* 'fact (that ···)' + the nominative particle *˙i*. This structure took on the status of a paradigmatic ending sometime between 1459 (or earlier) and 1518, so we would not expect lenition. For syntactic reasons the copula had no need for a suspective form *··· *˙i- ˙ti*; but the modern copula suspective **ici** has its own uses (Martin 1992:556b). The indicative assertive ending *- ˙ta* is lenited to *- ˙la* after the copula ··· *˙i-* (* *˙i- ˙ta* → *˙i ˙la*) and after the retrospective bound auxiliary *- ˙te/a-* (˚*ho- ˙te/a- ˙ta* → *˙hote ˙la* or *˙hota ˙la*). The emotive *- ˙two-* is probably the source of the copula variant ··· *˙i ˙lwo-*, and the ending *- ˙ta* of ··· *˙ilwo ˙ta* 'it is ··· ' lenites when that form is quoted: ··· *˙ilwo ˙la ˙ho ˙ya* 'say that it is ··· '.

7.2.2. After *l*, *y*, and often *i*, the postmodifiers *˙ka* and *˙kwo* 'question' appear as *˙Ga* and *˙Gwo*. After other vowels *˙wo* = *˙[G]wo* often replaces *˙kwo*, but the replacement of *˙ka* by *˙a* = *˙[G]a* is less common. (Juxtaposition to vowels may occur when the copula modifier *˙in* is ellipted, leaving the noun directly marked by the postmodifier.)

7.2.3. The postnominal particle *˙kwos* 'precisely' lenited to *˙Gwos* after *l*, *y*, or *i*, and after other vowels it completely elided the initial velar: *˙wos* = *˙[G]wos*. The same alternation is found in *˙kwom* (*˙Gwom*, *˙wom* = *˙[G]wom*) 'each', and *˙kwa* (*˙Gwa*, *˙wa* = *˙[G]wa*) 'with'. The particle *˙sa* is lenited to *˙za* after any vowel (or a vowel + *y*) or after *l*, the only examples of which are with the accusative marker: ··· *[˙ㅱ]l ˙za*. After a noun ending in a consonant the particle is usually prefixed by *˙i*, which in most instances can be taken as the nominative particle: ··· *˙i ˙za*. So the only time the unlenited form appears is when the particle is attached directly to a verb stem (ending in anything): *cwuk- ˙sa* 'only if I die', *˙tu- ˙sa* 'only if one enters'. Because the shape is so often *˙za* that is the shape of the particle usually cited; several dialects, however, retain the particle as sa (and isa), without lenition. The alternation of *˙kwos* with *˙[G]wos* occurs in the hyangka where (1:5) *˙tye ˙[G]wos* 'that special one' is written with a rebus, assuming that *˙wos* 'garment' was so pronounced at that time.

7.2.4. After *l*, *y*, or the copula ··· *ˑi-*, the bound auxiliary that marks the effective aspect -*ˑkᵉ/a-* is lenited to -*ˑGᵉ/a-*, so that *¨a(l)-/aˑl[o]-* < **aˑlo-* 'know' + -*ˑkᵉ/a-n* (effective modifier) → *¨alˑGen* (1463 Pep 1: 226a, 1465 Wen 1:1:1:42b, 1481 Twusi 11:22a). After the copula ··· *ˑi-* the bound auxiliary that marks the retrospective aspect -*ˑtᵉ/a-* is lenited to -*ˑle-*. When -*ˑtᵉ/a-* is attached to an ···*(l)-* stem the final *l* of the stem is suppressed and the initial *t* of the retrospective survives unscathed: *¨a(l)-/aˑl[o]-* < **aˑlo-* 'know' + -*ˑtᵉ/a-n* (retrospective modifier) → *¨aˑten* (1459 Wel 13:30a, 13:31b; 1463 Pep 2:222b, 2:225b; 1482 Kum-sam H:12b). The suppression is part of a more general rule.

7.2.5. The bound auxiliary that marks the deferential -*¨soW-* < **-osoˑpo-* is lenited to -*¨zoW-* after a typically voiced sound (vowel, *y*, *m*, *n*, or *l*) but a preceding *l* is suppressed: *¨a(l)-/aˑl[o]-* < **aˑlo-* 'know' + -*¨soW-a* (deferential infinitive) → *¨azoˑWa* (1449 Kok 6, 25; 1447→1495 Sek 11:40b; 1459 Wel 1:3b, 2:44b). Because the situations calling for the lenited form are so common, I usually refer to the deferential auxiliary as -*¨zoW-* rather than as the shape that is found in *nip.soˑWa* (1447→1495 Sek 11:8b; 1449 Kok 6, 78; 1459 Wel 1:3b, 8:96a, ...) and *nip¨sopˑkwo* (1459 Wel 2:72a). It is to be noted that the ···*W-* and ···*z-* stems attach the unlenited form: *¨twop.soˑWa* ← *¨twoW-* 'help' (1447 Sek 9:34b, 1459 Wel 8:46a), *¨as.soˑWa* ← *¨az-* 'grab' (1447 Sek 23:23b). After both ···*t-* and ···*T-* stems the auxiliary attaches as -*¨coW-*, as in *¨etcoˑWa* ← *¨et-* 'get' (1445 [1]Yong 27; 1447 Sek 13:13a, 13:32a; 1449 Kok 91) and *¨mwutcoˑWa* ← *¨mwuT-* 'ask' (1447 Sek 13:21a, 1465 Wen 1:2:1:7b). The deferential is attached as -*¨coW-* also after ···*c-* or ···*ch-* and optionally the stem-final ···*c-* (or ···*ch-*) is reduced to ···*s-* or ···*t-* so that the form for *mac-* 'meet' can be either *mascoˑWa* (1459 Wel 1:13b) or *matcoˑWa*$_1$ (1459 Wel 8:92b) and the latter is the same shape as the expected (?*)*matcoˑWa*$_2$ ← *math-* 'sniff, smell it', though that form seems to be unattested. For *cwoch-* 'follow, chase' the deferential infinitive is either *cwoscoˑWa* (1447 Sek 13:59a, 13:60a; 1459 Wel 2:18b, 8:54a, ...) or *cwotcoˑWa* (1447 Sek 13:45b, 23:25b, 24:2a); the form *¨cwossoˑWa* (1459 Wel 10:66a) is from *¨cwoz-* 'peck; kowtow; carve'. None of these internal strings suggest that proto-Korean enjoyed voiced obstruents in medial position. We find no examples of the deferential auxiliary before 1445, however, so this evidence alone does not rule out the hypothesis that proto-Korean (or Old Korean) had distinctive voicing, but it makes it unlikely that the voicing of stops was distinctive as late as 1445.

8. The rising tone of Middle Korean

8.0. We must bear in mind the impact of certain assumptions:

(1) We believe that proto-Korean had no monosyllables with the rising tone. A Middle Korean rising-tone monosyllable must have come from ***CV˙C[V]*** or from ***CV˙[V]C*** (or ***CV˙C[V]C***). In the first category we find ***¨kwom*** 'bear', where the earlier form is attested as ***kwo˙ma*** and the second vowel is confirmed by J *kuma* 'bear', whether the two words are cognate or one is a loan – or perhaps each is a separate loan from some other language, such as Old Chinese **gyum* 'bear'. A similarly shaped word is ***¨syem*** 'island', where we find no attestation of ****sye˙ma*** except for the phonogram-written word in the Old Paykcey language but that shape is strongly suggested by the form *sema* in Nihon Shoki, which is thought to be a loan, and the dissyllabic form is externally supported by J *sima* 'island'. (The accent type of both *kuma* and *sima* is the common low atonic.) We must presume that the three-way distinction of low, high, and rising accents developed before the massive onslaught of Chinese loan vocabulary, for despite a number of individual irregularities there are regular correspondences with the tones of Middle Chinese: Korean low for the Middle Chinese even tone, high for the Middle Chinese entering tone, and rising for the Middle Chinese rising and going tones alike. Cf Rosén 1974:113-8.

(2) If we assume that MK ***¨swok*** 'deep down/within' and ***¨twolh*** 'stone' also have a dissyllabic source of the first type, we can make a first approximation to the two proto-Korean forms as ****swo˙kV*** and ****twol˙hV***. The putative Japanese cognates or borrowings are *soko* 'bottom' (High-High) and *isi* 'stone' (High-Low).

(3) But when the second syllable of a Japanese dissyllable echoes the vowel of the first syllable, as in those two words, it may be the result of epenthesis, so that a CVC source is possible. Since, however, we need a vowel of some sort for the end of the Korean words in order to account for their rising accent we can assume that the second vowel is either original (pKJ **soko* and **dyolsi*) or is assimilated from some other vowel, such as the Korean minimal vowel (pKJ **sok^{u}o* and **dyols^{u}o*).

(4) If we project the minimal vowel back, the pKJ **sok^{u}o* is equivalent to the **soko* of the echo vowel but pKJ **dyols^{u}o* is not quite equivalent to **dyolsyo*.

(5) The noun ***¨swok*** had a variant ***¨swop***. Perhaps the final stop assimilated to the labial vowel. But Martin 1966:247 (#277) suggests

another scenario. The proto-Korean could be a reduction of ***swo˙pwok*** 'deep inside', contracted from ***swo[k]-˙pwok***, with our ***swok*** $^{4}/_{0}$ somewhat intact but attached to the bound noun ***˙pwok*** (probably found in ***˙poy s ˙pwok*** 'navel', from which modern **pay-kkop** is said to be a metathesis, and **pwok-phan** 'the very midst'), which I compared with the Japanese adjective *fuka-* < **puka-* 'deep' [low register].

(6) The words for 'stone' present additional problems.[38] MK ***h*** sometimes comes from ***s***, as probably in ***˚ho-/˚ho˙y-*** < ****hyo-*** < ****syo-*** 'do/be', cf pJ **sǫ-* 'do'. But an ***h*** can also come from ***k***, as in ***˙ptulh*** 'garden' < ****ptulk*** ?< ****putuluk*** (cf the dialect form **ttulak**), ***˙cah*** 'foot (measure)' < Chinese ***˙CAK*** (1103 Kyeylim #249),[39] and the set of variants ***˙phosk*** (***˙phos˙k ol*** 1466 Kup 2:21b) = ***˙phoch*** (***˙po.ch o˙lan*** Kup 2:88b) > **phath** 'red bean', as well as the auxiliary adjective **siph-** 'seem; desire' < ***siphu-*** < ***sikpu-*** (with variants ***sitpu-*** and ***sipu-***). In Samkwuk saki the Paykcey placename "Stone Mountain" was written with the phonograms ***TIN-˙QAK*** + the semantogram MOUNTAIN (Kim Tongso 1981:57), to which we may compare **tŏlkak tam** 'stone wall; rock pile; stony mountain path' if we take the synonymous **kak tam** as a shortening of that and reject identifying **kak** as ***˙KAK*** 'corner'. In a similar placename (Chen So.yong 1990:153) "stone" was written with just ***TIN*** ('rare') or with ***¨TENG*** ('equal'), a phonogram sometimes read in the hyangka as ***---ton*** (7:6, 7:8) or ***---tol*** (16:10). The final ***---h*** in ***¨twolh*** 'stone' seems to be from ***k***, as is shown by the dialect version **tolk**; a dialect version of **patwuk** 'stone checkers [game]' is **patol**, suggesting a derivation from ***pa[th] tolk** 'field [= checker square] stones'. A final velar is also found in the pTg **jolog* 'stone' (Kim Tongso's **d´olog*), but that may represent the suffix described in Sunik 1982:14-18. Now, it may be that the (***---h*** <) **---k** was a diminutive suffix in the two Korean words. Or, the word for 'stone' may be a deverbative noun from the intransitive stem ****two˙lo-*** 'turn' + ***-k*** = ****two˙lok*** 'that which rolls'. A similar explanation with the common deverbative suffix ***-s*** (related to the postadnominal 'fact' and the adnominal particle 'of') will account for the noun ***¨twols*** '(cyclical) year' = < ****two˙lo-s*** 'that which turns (= cycles), a round', at the possible expense of a direct comparison with J *tǫsi* LL 'year'. See Martin 1966:246, #265.[40] The Korean word for 'rock' is **pawi** < ***pa˙hwoy*** (1447 Sek 6:44a, 9:24b, 11:35a) and that is **pangkwu** in many dialects. On the reconstruction of consonant strings at the end of 'stone' and within 'rock' see Choy Hak.kun 1977. On the possibility that ***lh*** < ***lk*** see LKM 1968:224 n.31, where mention is made of the

phonograms ¨*HWALQ-HUY* used for ***holk*** 'earth' (1103 Kyeylim #53, but cf n. 39) and of the spelling ***tolh*** for ***tolk*** 'fowl' in ˙***tolthwo*** = ˙***tolh [˙]two*** (1481 Twusi 8:29b) but the accent dot (if not a textual mar or scribal mistake) makes me suspect that this is just the plural ˙***tolh*** 'group' with ***tolk*** intentionally or inadvertently omitted.[41] Other Middle Korean words with final ***···lh*** include ˙***milh*** 'wheat' for which the J *mugi* < **munki* LH is proposed as a cognate in Martin 1966 (#319) though the ultimate source may be Middle Chinese *mwek* or Old Chinese ?**mlwek*. (Starostin 1991:69 reconstructs pA **mürki* through a comparison of the Korean and Japanese words with the pTg **murgi* 'barley, wheat'. Cf Jurchen *mere* 'buckwheat'.)

(7) The noun **tōmi** 'sea bream' has a dialect version reported as **tom** (? = **tōm**) and attestations as ***twomi*** in the undotted texts 1690 Yek.e 2:38a and ?1775 Han-Cheng 14:42a. The Japanese equivalent is *tai* < OJ *tafyi* < pJ **tapi* (low atonic). The Korean rounded vowel in the first syllable might be explained as an assimilation to the following labial nasal, but that nasal is not easily explained. If it is part of a suffix (***-mi*** or just ***-m***) then the vowel ***wo*** could be explained as pKJ **tap[i]* > **taw* > ***two***. We would expect the forms to be *¨***twom** and *˙***two˙mi** but the modern dialects have the long vowel in **tōmi**, which should go back to *¨***twomi** or *¨***two˙mi**, and that would fit into our framework only if it contains compression of further structure: *˙**two˙[C¼o]-mi** or *˙**two˙V[C]-mi**. Yet another possibility is that the OJ *tafyi* was actually *˙**tabyi** < pJ **tanpi* and that would be supported by the modern Shuri form *taman*, since pJ *···**np**··· becomes either ···***b***··· or ···***m***··· in modern dialects, under conditions only partly predictable.

(8) Other one-syllable nouns with the rising tone for most of which we have likely explanations include **kā** 'brink, edge, limit' < ¨***koz*** or ¨***kos*** < *˙**ko˙so** < *˙**ko˙co** (cf ˙***ko˙cang*** 'end, extremity; extremely, most', ***s ko˙ci*** > **kkaci** 'till, all the way to' : J *kisi* < OJ *kiysi* LL < pJ **k¼oCisi* 'bank, shore') : ˙***kis*** 'collar, lapel', ***ki˙sulk*** 'edge, border'; and the following words:

¨***ta*** 'all' < ***ta[o]-˙a*** 'exhaust'; cf ***te*** 'more' (see n. 22)
¨***nat*** 'grain' (?= ¨***naT*** < *˙**na˙t¼o**; cf §3.3)
¨***ay*** 'guts' < ?*˙**a˙[C]i**, ?< ***a-˙i** (< ?)
¨***chay*** 'all' ?< ***cho-˙i** 'fully'
¨***hay*** 'much(ly)' < ***ha-˙i**
¨***kay*** (1518 Sohak-cho 9:100a) 'dog' < ***ka˙hi*** (1449 Kok 70, 1462 [1]Nung 8:122a)

"may 'hawk' ?< ****ma'[C]i***, ?< ****ma-'i***, ?< ***mV*** + ***"[s]ay*** 'bird' : J ***wasi*** LL < pJ ****basi*** ?HL 'eagle' – cf Mg 'eagle': Dagur ***mure***, Khalkha ***burged***, Monguor ***burgŏd***

"say*$_1$** 'bird' ?< ****sa'ngi or ****sa'ki*** : J ***sagi*** < pJ ****sanki*** HH 'heron; magpie' (Martin 1966:226 #14), pA ****sag*** 'cry of magpie' (Miller & Street 1975:1:91-3, citing Ma ***saksaha*** 'magpie')

"say*$_2$** 'thatch' (1463 Pep 2:244a) ?< ****sa[C]i, ?< ****sa-i*** (< ? – cf J ***sasa*** HH 'bamboo-grass')

"key (1527 Cahoy 1:10b=20a) 'crab' ? < ****ke'[n]i*** – cf dialect **kengi**, monosyllabic ***'KHAY*** in 1103 Kyeylim (#106) though that was perhaps intended as a soundalike of ***"HHAY*** (the Chinese word for 'crab'), 1400+ Kwan-yek (Mun Senkyu 1972 #238) ***'KAK-"I*** read ***ke-i*** in 15th-century northern China : J ***kani*** HH (Martin 1966:229 #54). Aberrant: ***kwey*** (1773-1837 Mulmyeng-ko 2:6).

"kwey < Middle Chinese ***ghyùy*** = ***'KKWUY***(?/***'KKWOY***) 'chest, case'

"kwoy (1462 [1]Nung 8:122a) 'cat' < ****kwo'[n]i*** (cf dialect **konyangi, konayngi**) – ***"kwoy-ni"*** (***"KWUY-NI***) in 1103 Kyeylim (#95; cf LKM 1968:238) : J ***ne-kwo*** HL[42]

"twoy 'damn Chinaman / Tatar; early Manchurians, barbarians' may be a variant of ***"twuyh*** 'behind; north' ?< ***"two'li*** noun < ***"two(l)- / two'l[o]-*** < ****two'lo-*** vt 'turn (around/back); return', but it could be directly from ***"two'li***, with the same connotation of "whirling dervish" that is found in ***tatay hwuyhwuy*** (?1517- Pak 1:73a) 'a Tatar Muslim', borrowed from Chinese ***húihui*** 'Muslim' < 'whirl-whirl'. The Chinese ***húi*** (***'HHWOY***) is the source of the bound adverb in ***hwoys "two(l)- / two'l[o]-*** < ****hwoy s two'lo-*** bnd adv + vi 'whirl around' and ***hwuys twulG- / twulu-*** = ***hwoys twolG- / twolu-*** < ****hwoy s twoloG-*** < ****hwoy s twolo-k-*** bnd adv + vt 'whirl it around'

"nwuy (***"nwuy 'yey*** 1447 Sek 6:7b) 'world; era' < ***nwu'li*** (1527 Cahoy 2:1a); cf WORLD-***li*** = ****nwuli*** (hyangka 13:8) but also WORLD-***lye*** (hyangka 21:4, 22:2)

"nayh (***"nay'h i*** 1445 [1]Yong 2) 'stream' < ****na'lih*** (hyangka 4:6 has a phonogram for ***li*** following a semantogram for 'stream') – cf ***no'li-*** 'descend', ***'no'li*** (1459 Wel 1:7a; initial dot an error?) = ***no'li*** (?1527- Pak 1:69b) 'downward'

"mwoyh 'mountain' ?< ****mwo'lih*** < ****mwo'lwo'hi*** (cf 1445 [1]Yong 4:21b ***'phi mwo'lwo***, a placename ("Torreya-nut Mountain") : J ***mori*** ?< OJ ****mǫri[y]*** < pJ ****mǫrǫ(-)Ci*** 'wooded mountain > woods'

"mal 'speech' (1) ?< ****ma'los***, ***"malssom*** ?< ****ma'los hom***; (2) ?< ****ma'los*** < ?****ma'los-*** 'speak', ***"malssom*** ?< ***ma'los-om***; (3) ?<

**ma˙lo-s* < **ma˙lo-* 'speak', *¨malssom* ?< **ma˙los hom* either with assimilation (*sh* > *ss*) or with truncation of the auxiliary *°ho-/˙ho˙y-* and reinforcement of *s* after *l* once the minimal vowel has elided[43]

¨swol 'brush' ?< *˙SWALQ* = MCh *srwat* (despite the irregular tone)

¨kwol$_1$ 'a valley; a deep hole' (*¨kwo˙l oy* 1481 Twusi 8:51a) – cf *˙KWULQ* 'hole, cave' = MCh *khwet* (despite the discrepancy in tone), *kwo˙lang* (Cahoy 1:4a=7a) 'furrow' = *kwolhang* (1775 Yek-po 13a, ?1775 Han-Cheng 10:3a, 12:3a) < **kwolh-ang* (cf *kwolh-* adj 'be unfilled, partly empty') : J *kura* HL 'seat, saddle; (OJ) valley'

(*)*kwolwo* (*¨KWO-¨LWO*, Běijīng *kǎolǎo*) = *˙kwo˙li* 'a (wicker) hamper' (1527 Cahoy 2:7a=13a)

¨kwul 'chimney, stovepipe' < *kwu˙tul[h]* (*kwu˙tul˙h ey* ?1517- Pak 1:76a) 'hypocaust' – or perhaps that is < **kwu-twolh* 'heat stones' = **kwutulq tŏl**. Cf *¨kwuW-* = *¨kwup-/kwu˙W[u]-* (also *kwu˙[Wu]-*) < **kwu˙pu-* vt 'bake, roast'. The word *kwoloy* (?1775 Han-Cheng 10: 52a) 'hypocaust' is a later formation.

¨cywong 'slave' < *˙CCYWONG* (Tongkwuk 1:24b) = MCh *dhzywong˙* 'follower, slave'. The final dot is the MCh going tone; the verb *CCYWONG* (*°ho-/˙ho˙y-*) = MCh *dhzywong* 'follow' has the even tone.

(9) Examples of the rising tone that are yet to be explained:

¨twon 'money'

¨pem 'tiger' (see §7.1)

¨nel 'board'

¨seyh 'three'

¨neyh 'four'

¨pyel 'star' ?< **pye˙lV* = **pye˙li* (hyangka 12:7 semantogram + *li*, not *-l i* !) – cf J *hosi* < OJ *fosi* < pJ **posi* HH; Mg Khalkha *od*, Dagur *xode*, Monguor *foode*. (See also Starostin 1991:36. For a different approach, see Miller 1987b:46-7.) A velar initial is indicated by the initial of pTg **xosi-kta* = Tg *ōsīkta* (Tsintsius 2:27), Nanai *xosiakta / xos(ï)akta*, Ma *usiha*, etc. And the Turkic words for 'star' have an initial *s*.

¨pti 'wheel' ?< **pu˙ti* – cf J *futi* < **puti* LH 'rim; cliff'

¨sil 'thread' ?< **si˙lV* – cf pTg **sirä* 'thread' (Kim Tongso 1981: 167, but he fails to state what words the reconstruction is based on, presumably those under *sirekte* 'tendon' in Tsintsius 2:97-8). On the resemblances of *¨sil* to words in various languages, including English "silk" see LKM 1991:24).

¨kwol$_2$ 'sedge, rush plant' (1527 Cahoy 1:5a=9b)

¨kwol$_3$ 'coffin, coffer' (?1468- Mong 16b)

¨nwun 'snow' – cf pTg **lūña* (Kim Tongso 1981:127)

¨twuyh 'behind; north' ?< *¨twoy* (leaving the *···h* as a suffix or unexplained) < *two˙[l]i* < *two˙l-i* 'turning (around)'

¨twulh 'two, pair' < *twu[p]ulh* based on phonograms *TWO-˙PWOK-˙ZI* pronounced [tu-pu-ər] in 1400+ Kwan-yek (Mun Senkyu 1972 #537) and *TTWO-˙PPWOLQ* probably pronounced [tu-pur] in 1103 Kyeylim (#20) ?< *¨twu ˙pol* 'two fold' : J *turub/m-* < **turu-n[a]-pa-* L 'mate', *ture[y]-* < **tura-Ci-* H 'bring as company'. Kim Tongso 1981:66-8, comparing pTg **jūr* (= his **d´ur-*), argues against the internal *···p···* that is usually inferred from the phonograms for this and a few words having similar shapes, such as *swu(˙)(w)ul* 'wine' and *ce˙wul* 'weighing scales'.

(10) Is *¨cy$^{e}/_{ak}$-* 'little' (with the double dot in all forms) from **ci˙$^{e}/_{ak}$-*? Or is the persistence of the long rise merely expressive?

9. How did the accent become distinctive?

9.0. We have seen that the alternations at the end of the Korean "irregular" verb stems can be internally explained by postulating that their basic shape was **··· ˙C$^{u}/_{o}$-* with the consonant undergoing lenition when followed by a vowel.[44] As a side benefit we thereby account for the alternation of the initial rising pitch (marked by the double dot) with the low pitch (left unmarked),[45] a benefit that can be extended to include the similar accentual alternation in stems of the type *¨···m- / ··· ˙m-* and *¨···n-/··· ˙n-*, provided that we postulate the basic shapes as **··· ˙m$^{u}/_{o}$-* and **··· ˙n$^{u}/_{o}$-*. With the exception of *tuT-* 'hear', *toT-* 'run', *puz-* 'pour' or 'swell', and *nwuW-* 'lie down', all stems in this group are of a single accentual type, Low-High. The exceptions probably point to reductions from forms with stronger vowels.

Quite differently, the "l-extending" stems come in two accentual varieties: either *¨···(l)-/··· ˙l[$^{u}/_{o}$]-* < **··· ˙l$^{u}/_{o}$-* or *˙···(l)-/ ˙··· ˙l[$^{u}/_{o}$]-* < ** ˙··· ˙l$^{u}/_{o}$-*. The contrast between the initial Low and High is found in pairs of words in which the first syllable contains the minimal vowel $^{u}/_{o}$ (§2.5). The majority of the stems are of the low-rising type, so the initial High stems are what need to be explained. These all contain the minimal vowel $^{u}/_{o}$ in the first syllable but that occurs also in stems of the Low type, resulting in the minimal contrasts just mentioned. The Low minimal-vowel stems suppress the rise that is heard in the compressed form when the nucleus is some other vowel: *[¨]ko(l)-/ko˙l[o]-* < **ko˙lo-* 'change it'[46] vs *¨ke(l)-/ke˙l[u]-* < **ke˙lu-* 'hang

it' and *¨two(l)- / two˙l[o]- < *two˙lo-* 'turn (around/back); return'; *[¨]pu(l)-/pu˙l[u]- < *pu˙lu-* 'envy' vs *¨pwu(l)-/pwu˙l[u]- < *pwu˙lu-* 'blow' and *¨pi(l)-/pi˙l[ɯ]- < *pi˙lɯ-* 'beg; pray; borrow'. How can we explain the contrasting accentual types for the l-extending stems?

9.1. We are reluctant to give up the hypothesis that the accent was nondistinctive for all of the proto-Korean verb stems, or to qualify that hypothesis by adding "except for the l-stems that have the minimal vowel". Somehow we have to explain why there are about the same number of short stems with the minimal vowel that are High (12) as are Low (10). The High miscreants include *˙skwu(l)- / ˙skwu˙l[u]- < *˙skwu˙lu- ?< *su˙k(w)u˙lu-* 'kneel', with a rounded high vowel, and the following stems with a minimal vowel:

*˙su(l)- / ˙su˙l[u]- < *˙su˙lu-* 'vanish'
*˙psu(l)- / ˙psu˙l[u]- < *˙psu˙lu-* 'sweep'
*˙phu(l)- / ˙phu˙l[u]- < *˙phu˙lu-* 'untie; (dis)solve, clear'
˙thu(l)- /˙thu˙l[u]- < *˙thu˙lu-* 'hard press, scrutinize'
*˙tu(l)- / ˙tu˙l[u]- < *˙tu˙lu-* 'enter'
*˙so(l)- / ˙so˙l[o]- < *˙so˙lo-* 1 'burn it', 2 'melt it, make it vanish'
*˙ko(l)- / ˙ko˙l[o]- < *˙ko˙lo-* 'grind'
*˙sko(l)- / ˙sko˙l[o]- < *˙sko˙lo-* 'spread it out'
*˙pho(l)- / ˙pho˙l[o]- < *˙pho˙lo-* 'sell'
*˙spo(l)- / ˙spo˙l[o]- < *˙spo˙lo-* 1 'be pointed', 2 'launder', 3 'sip, inhale'
*˙to(l)- / ˙to˙l[o]- < *˙to˙lo-* 1 'hang it', 2 'freeze and break'
*˙no(l)- / ˙no˙l[o]- < *˙no˙lo-* 'thread the warp of (a loom)' (cf *˙nolh* 'warp')

For two of the stems there is no direct evidence for the high on the second syllable (critical forms are unattested), but it is safely imputed. The group of ten Low stems with the minimal vowel:

*[¨]cu(l)-/cu˙l[u]- < *cu˙lu-* 'be slushy, wet'
*[¨]pu(l)-/pu˙l[u]- < *pu˙lu-* 'envy'
*[¨]tu(l)-/tu˙l[u]- < *tu˙lu-* 'hold; lift, raise, hold up; cite'
*[¨]nu(l)-/nu˙l[u]- < *nu˙lu-* 'be better; get/be longer'
*[¨]mu(l)-/mu˙l[u]- < *mu˙lu-* 'bite'
*[¨]co(l)-/co˙l[o]- < *co˙lo-* 'be fine, small'
*[¨]ko(l)- / ko˙l[o]- < *ko˙lo-* 1 'change it', 2 'say' (defective; < *koT-*, see n. 12), 3 'be sideways'
*[¨]to(l)-/to˙l[o]- < *to˙lo-* 1 'be sweet', 2 'weigh it', 3 'lift it'
*[¨]mo(l)-/mo˙l[o]- < *mo˙lo-* 1 'roll it up', 2 'put solids into a fluid'
*[¨]no(l)-/no˙l[o]- < *no˙lo-* 'fly'

Six of the twelve aberrantly high stems may be accounted for if we postulate syncope at the beginning:

ˈphu(l)- / ˈphuˈl[u]- < **ˈphuˈlu-* ?< **puˈhuˈlu-* or **puˈkuˈlu-* 'untie; (dis)solve, clear'

ˈpho(l)-/ ˈphoˈl[o]- < **ˈphoˈlo-* ?< **poˈhoˈlo-* or **poˈkoˈlo-* 'sell'

*ˈthu(l)-/ *ˈthuˈl[u]-* < **ˈthuˈlu-* ?< **tuˈhuˈlu-* or **tuˈkuˈlu-* 'hard press, scrutinize'

ˈpsu(l)-/ ˈpsul[u]- < **ˈpsuˈlu-* ?< **puˈsuˈlu-* 'sweep'

ˈsko(l)-/ ˈskoˈl[o]- < **ˈskoˈlo-* ?< **soˈkoˈlo-* 'spread it out'

ˈspo(l)- / ˈspoˈl[o]- < **ˈspoˈlo-* ?< **soˈpoˈlo-* 1 'be pointed', 2 'launder', 3 'sip, inhale'

Is the aberrant accent of the remaining six stems a trace of a missing prefix? If so, what other evidence can we find for it? For the moment, I will use the lost prefix as a working model and reconstruct:

ˈsu(l)-/ ˈsuˈl[u]- < **X-ˈsuˈlu-* 'vanish'

ˈtu(l)-/ ˈtuˈl[u]- < **X-ˈtuˈlu-* 'enter'

ˈso(l)-/ ˈsoˈl[o]- < **X-ˈsoˈlo-* 1 'burn it', 2 'melt it, make it vanish'

ˈko(l)-/ ˈkoˈl[o]- < **X-ˈkoˈlo-* 'grind'

ˈto(l)-/ ˈtoˈl[o]- < **X-ˈtoˈlo-* 1 'hang it', 2 'freeze and break'

ˈno(l)-/ ˈnoˈl[o]- < **X-ˈnoˈlo-* 'thread the warp of (a loom)'

Virtually all monosyllabic stems ending in a stable *…p-*, *…t-*, or *…k-* carry the Low accent, and the very few exceptions seem to be explainable. For one-syllable stems ending in vowels (see the chart in Martin 1992:72) the choice of low or high pitch is mostly predictable by the quality of the vowel with the exception of diphthongs of the type *…Vy-*, and that has to do with their origin as dissyllabic stems of the type **…Vi-* including **…V[C]i-*. The stems with the vowels ***i***, ***u***, or ***o*** carried the High accent. Those with ***e*** or ***a*** were predictably ambivalent (I mark these with a hollow dot ˚): High before certain endings and Low before others. The Low version must be secondary and can be disregarded in talking about proto-Korean. Stems with *wu* or *wo* were usually ambivalent, as was the unique stem *˚hoˈ- / ˈhoˈy-* 'do' or 'be', which I reconstruct as **ˈhyo-*; but, for unknown reasons, the two exceptions *ˈskwu-* 'dream' (?< **suˈkwu-*) and *ˈhwo-* 'stitch' are always High, though the long vowel in modern **hō-** calls for MK **¨hwo-*. I suspect that *ˈhwo-* has reduced or dropped an initial syllable (**CVˈhwo-*), perhaps the intensive prefix, and has undergone two different courses of development:

(1) *?*s[o]-ˈhwo-* > **¨hhwo-* > **¨hwo-* > **hō-**

(2) *?*[so-]ˈhwo-* > *ˈhwo-*

9.2. From this description it should be clear that I am in agreement with Ramsey that accent was nondistinctive in proto-Korean verb stems, though I will continue to mark it just to keep the facts in focus. Ramsey was the first to see the importance of the skewed statistical picture of the accentual distinctions of Korean stems and to propose dissyllabic reconstructions of the type given here. There are several implications in saying that the pitch accent was not distinctive for proto-Korean verb stems. One is that we are freed of responsibility for the accent in comparing Korean verbs with putative cognates in the Altaic languages. Another is that the distinctive register of proto-Japanese stems must be a separate development that cannot be looked to for support of cognateship with Korean verbs. One explanation of the Japanese development asserts that the low-register words (including the nouns) had long vowels. That, of course, does not improve the situation with respect to comparisons with Korean, but it does suggest that in exploring correspondences with Japanese words we look closely for evidence of vowel length in the various Altaic languages. If found, that would bolster the proposal of at least as close a relationship for Japanese with those languages as with Korean, perhaps still closer.[47]

9.3. There appear to be no Korean nouns that have alternants like those of the major "irregular" verb conjugations, though there is some evidence that the voiced fricatives in certain Middle Korean words are the result of lenition. The relative simplicity of the noun shapes is unsurprising, given the looser ties between a noun and a particle in contrast with the tight joining of the stem and ending. A noun can freely appear with no marker, and the case particles (especially the accusative) are quite often omitted in Middle Korean as well as in the modern language. But the alternations in verb stems of the types ***...mk- / ...mʌo-*** < ****...mʌok-***, ***...lG- / ...lʌo-*** < ****...lʌok-***, ***-zG- / -zʌo-*** < ****...zuG-*** < ****...suk-***, and ***...lʌol- / ...ll-*** are paralleled by a few nouns (Martin 1992:238-9), in which the compressed form is selected for the attachment of the primary case particles ***ˑʌol*** (accusative), ***ˑi*** (nominative), ***ˑeay*** (locative-allative), and ***ˑʌoy*** (genitive or locative-allative). All the nouns of these several types are Low, with no rise.

There remains the problem of explaining the accentual contrasts that are found in other Korean nouns, such as ***swon*** 'guest' and ***ˑswon*** 'hand', ***poy*** 'pear' and ***ˑpoy*** 'belly' or 'boat'; see §9.4. Whitman 1994 rejects the notion that pitch accent was totally lacking in proto-Korean and says that while pitch distinctions are unneeded for verb stems the nouns require us to recognize them. He concludes that "The resultant

picture -- is a typologically familiar one: a language with a single register or melody (Low-High), no accentual distinctions for inflecting stems, and n + 1 accent patterns for nominal stems, where n = number of moras in the stem." In other words, a system much like that of proto-Japanese, except that the failure of proto-Korean to distinguish register must mean that Korean lost a distinction that is maintained in Japanese, if we assume that these two languages come from a common source. (Reinterpreting the low register as vowel length, while quite plausible, does not help in the comparison of the two languages.)

9.4. As Ramsey 1991:220 observes, the few Middle Korean nouns that end in the velar nasal are low in accent; an exception ˙***mang*** 'net bag' is borrowed from Chinese. Ramsey finds other statistical patterns that encourage us to think the unusual accent types in nouns may be due to compounding or borrowing. Whitman 1994 observes that no native Korean nouns with a final vowel are Low and that ***poy*** 'pear' and ***swon*** 'guest' are unique examples of ···***y*** and ···***n*** with the low pitch. He asks whether that may be an attempt to differentiate them from their more common homonyms ˙***poy*** 'belly' or 'boat' and ˙***swon*** 'hand'. If so, and assuming they are not borrowings,[48] the proto-Korean reconstructions of 'pear' and 'guest' will be identical with their segmental homonyms. Whitman posits original shape types like these:

1a) CV with the High (tonic) accent
1b) $CVC_{[-voice]}$ with the High (tonic) accent
2) $*CVC_{[+voice]}V > CVC_{[+voice]}$ with the High (tonic) accent
3) $*CVC_{[+voice]}$, and $*CVC_{[+voice]}V$ with the Low (atonic) accent

The monosyllables of the third type originally had a final vowel that was High. When compressed they yielded the monosyllabic rise written with the double dot in Middle Korean.

Whitman explains a fourth type, the seemingly exceptional non-rising Low nouns of one syllable, which may end in either a voiced or a voiceless consonant, as reductions from two syllables with the minimal vowel ***ŭ/o*** in the second, so that a High accent may be imputed for the second syllable. In that way the reconstructed form follows the basic melody of LH. The distribution can be illustrated with a few examples (mine, as are the questioned derivations, based on Whitman's other forms and his rules):

1a) ˙***pha*** 'onion', ˙***pye*** 'rice plant' (the dot was mistakenly omitted in LCT 1964:582a), ˙***hye*** 'tongue', ˙***sywo*** 'ox', ˙***nwu*** 'who', ˙***pi*** 'rain', ˙***phi*** 'blood'; ˙***tay*** 'bamboo', ˙***may*** 'whip', ˙***hoy*** 'sun', ˙***ptoy*** 'dirt', ˙***cwuy*** 'rat'

1b) *ˊip* 'mouth', *ˊiph* 'gate', *ˊtiph* 'rice straw', *ˊpwuph* 'drum', *ˊkwot* 'place', *ˊtet* 'a while', *ˊpwut* 'brush', *ˊpak* 'gourd', *ˊstek* 'rice cake', *ˊhwok* 'tumor', *ˊkwoh* 'nose', *ˊwos* 'garment', *ˊpis* 'comb', *ˊcec* 'milk', *ˊpich* 'color'; *ˊchulk* 'arrowroot'

2) *ˊnwon* 'field', *ˊnwun* 'eye', *ˊsin* 'shoes', *ˊmul* 'water', *ˊmal* 'measure', *ˊpal* 'foot', *ˊtol* 'moon', *ˊstol* 'daughter', *ˊmilh* 'wheat', *ˊsolh* 'flesh', *ˊpam* 'night', *ˊhim* 'strength', *ˊpwom* 'springtime', *ˊmwom* 'body', *ˊnwom* 'fellow', *ˊhwom* 'groove'

3) *¨kwom* 'bear' < *kwoˊma*, *¨syem* 'island' < **syeˊma*, *¨sil* 'thread' ?< **siˊlV*, *¨nwun* 'snow' ?< **nwuˊnV* (see §8.0)

4a) *tung* 'back' < **tunˊko*, *stwong* < **sotwonˊko* 'dung', *skweng* < **sokwenˊko* 'pheasant', *khwong* ?< **kohwonˊko* 'soybean'

4b) *tolk* 'fowl' < **tolˊko*, *solk* 'leopard cat' < **solˊko*, *alph* 'front' < **alˊpoh*; *mol* 'horse' and *hwal* 'bow' remain unexplained but they were probably loanwords[49]

4c) *math* ?< **maˊtoh* 'yard', *path* ?< **paˊtoh* 'field', *mith* ?< **miˊtʷoh* 'bottom', *swoth* 'pot' ?< **swoˊtoh* 'pot', *twoth* ?< **twoˊtoh* 'boar'; *noch* ?< **noˊcoh* 'face'; *wos* ?< **woch* ?< **woˊcoh* 'lacquer'

4d) *cip* ?< **ciˊpʷo* 'house', *cek* ?< **ceˊku* 'time', *mwok* 'neck' ?< **mwoˊko* 'neck', *nyek* ?< **nyeˊku* 'direction'; *kwoc* < **kwoˊco* 'flower'; *pit* ?< **piˊtʷo* 'price; debt'; *wuh* 'top; above' ?< **wuˊhu*

4e) *pask* ?< **paˊsok* 'outside', *swusk* ?< **swuˊsuk* 'charcoal', *ˊphosk* = *ˊphoch* (> **phath**) ?< **pohoˊsok* = **pohoˊcok* 'red bean' (see §8.0)

The noun *ˊstek* 'rice cake' must have had two syllables that collapsed into one, thereby creating the initial cluster: *ˊstek* < **suˊtek*, from which J *sitogi* seems to be an eleventh-century borrowing. Whether or not accompanied by nasality, the voicing of the velar in the Japanese version (as attested by the accent dots in 1081 Myōgi-shō) serves to confirm my view that the voicing of obstruents was nondistinctive in earlier Korean, as it is today, for otherwise we would expect **sitoki* – as, mistakenly, Ōno Susumu transcribed it in Iwanami Kogo-jiten.

To be explained are the accentual irregularities in the pronoun *ne* 'you'; the canonical rule calls for **ˊne* like *ˊna* 'I'. (The formal-style *ce* 'I' is borrowed from Chinese *ˊCO* 'self' and therefore need not be of concern.) The third-person demonstratives *ˊi* 'this' and *ˊtye* 'that; he' are what we expect, but the lowness of *ku* 'that; you' is aberrant, as is that of the earliest example of its variant *kwo* (1518 Sohak-cho 9:46a).

9.5. If we follow Whitman's formulation, the pitch patterns for the proto-Korean ancestors of the Middle Korean monosyllables were largely, if not entirely, determined by their shape. Certain shape types are in evidence also among the Middle Korean dissyllables of the Low-Low type, as compared with the majority Low-High type. Most of the Low-Low nouns end in a consonant, and Ramsey finds that a third of them have the minimal vowel *ɯ/o* in both syllables, as in ***mozom*** 'heart' and ***motoy*** 'joint'. A good many of the Low-High nouns end in vowels; and ***ku˙lus*** 'dish' is the only Low-High noun that has the minimal vowel in both syllables. The third type of two-syllable nouns have the prototonic pattern: the high pitch sets in at the beginning and (optionally, it would seem) either continues on (HH) or falls (HL). Examples: LH ***ye˙lum*** 'fruit', ***ka˙ci*** 'kind, variety'; LL ***polom*** 'wind', ***toli*** 'bridge' (= ***˙twolh***); HH/HL ***˙kwu˙lwum / ˙kwulwum*** 'cloud', ***˙ka˙ci / ˙kaci*** 'branch'.

Although the group of LH nouns has most of the population, we cannot easily explain away the nouns in the other two groups. And, as Whitman observes, there is another piece of evidence that supports accentual distinctions even for the one-syllable nouns. That is the phenomenon described by Martin 1992:8-9 as "accent suppression before particles", by which most but not all of the tonic monosyllables of Middle Korean and at least one dissyllable (***swo˙li*** 'sound') suppress the high pitch before the locative-allative particle ***˙e/ay*** and its variant ***˙ɯ/oy***. Kim Wancin 1973 assigned the tonic monosyllables to two different accentual classes, saying that those nouns that undergo the lowering of the High syllable were originally High-Low but the others (the minority) were High-High, observing that a member of the former group (the majority) loses its high pitch also when the first member of a compound noun, confirmed by Ramsey 1978 for the reflexes in the Hamkyeng dialect. The two diagnostic environments call to mind the peculiar "High/Low" verb stems that I have marked with the hollow dot. These stems seem to be basically High and lose the accent under circumstances that are definable, but not identical with those of the accent-suppressing nouns. In Martin 1992:69 I speculated that the persistent High of the minority group might be retained from a lost or absorbed second syllable. Among the always-high monosyllables, the noun ***˙skwum*** 'dream' is from the substantive ***˙skwu-m*** of ***˙skwu-*** 'dream', a stem that (as noted above) is irregular in its accentuation to begin with, and ****˙phwum*** 'bosom' is either from the stem ***˙phwum-*** 'embrace, clasp to one's bosom' or underlies that stem (the more likely

possibility). One or the other was possibly derived from the substantive *˙phu-m* of *˙phu-* 'bloom; spread/extend it', but at the expense of at least part of the comparison with pJ **pukuma-* L 'hold in the mouth, harbor, comprise, contain' in the etymology HOLD CLOSE (Martin 1966:233 #107). The noun *˙poy* 'belly' is likely to have a dissyllabic origin **po[l]-i* to which pJ **para* LL is compared; *˙hoy* 'sun' (also 'year') may be similar if comparisons with OJ **key* L 'days' < pJ **ka-Ci* or aberrantly **kǫ-Ci* (to account for J *koyomi* 'calendar') are taken to indicate * *˙ho-˙i*, in which the *-˙i* is the usual suspect we marshal to explain monosyllables ending in diphthongs. The noun *˙pi* 'rain' (and the verb made from it *pih-* 'sprinkle') have a likely match in pJ **pur[a-Cji* L 'sprinkle; precipitation': *˙pi* < * *¨puy* < **pu˙[l]i* ?< **po˙li*.[50] The lost Korean verb (? **po˙l¼o-*) may be seen in the transitive verb *spu˙li-* 'sprinkle it' and the **spo-* that lurks behind the bound infinitive *˙sp-a* 'fall' < * *˙so-˙po-* with the intensive (see n. 60). Not so easily explained are the always-high nouns *˙pul* 'fire' and *˙mwul* 'crowd', but here again the usual culprits may be at work: ?* *˙pul-˙i* and * *˙mul-˙i* or * *˙mwul-˙i* (preserved in later **muli**?) have attractive matches in OJ *fiy* < **pǫ-Ci* L 'fire' and *mure* L 'crowd' < *mure[y]* the infinitive of **mura-Ci-* 'throng'. The prehistory of *˙mul* 'water' is less clear, but it is likely to be related to J *mizu* < *myidu* < **mintu* or (Martin 1992) **myin[a]-tu*.

There remains the mystery of just why the accent suppression was triggered by only one of the case-marking particles, the locative-allative *˙e/ay* and its variant *˙u/oy* (in a few examples also by the homonymous genitive). So far as I know, no one has looked into this question.

9.6. Our only good reason for positing a dissyllabic origin for the **... ˙m[u/o]-* and **... ˙n[u/o]-* verbs is that we can thereby explain the rising accent as the blend of Low + High when the dissyllabic shape is compressed. For the other verbs of the rising accentual type, we are at the same time setting up an environment that permits us to account for the consonant alternations found in the other groups of stems of that accentual type. Here our account is that of automatic weakening (lenition) before a weak vowel in dissyllables. Ramsey 1991, while acknowledging the dissyllabic origin, would now say that the stems contained distinctively voiced obstruents (**b d g z**). The voicing is distinctive because Ramsey would newly treat the regular *...p- ...t- ...k- ...s-* stems as from Low-High dissyllables (**... ˙Cu/o-*) that do not compress into monosyllables. He assumes that a syncope left those stems ending in voiceless consonants with nothing on which to hang

the automatic High of the second syllable, while after a voiced sonant the syncope left a trace by lengthening the vowel before the voiced consonant (including the nondistinctively voiced nasals), and this allowed the high pitch to retain a foothold by blending it with the (automatic) initial low pitch to produce the rise represented by the Middle Korean double dot. This reinterpretation is possible, but I do not see that much is gained thereby, and I am unhappy with the burden of an additional set of obstruent phonemes that occur only medially and (in verb forms, at least) only before the minimal vowel.[51] Moreover I see no reason to regard the voiceless-final stems, in most instances, as more than monosyllables.

9.7. The notion of earlier distinctive voicing in Korean came about because the Middle Korean orthography provided a separate notation for the voiced fricatives. If we assume that the voicing of obstruents (including *s*) in proto-Korean was the same as that of the stops today (i.e. they were automatically voiced when in voiced environments), then the articulation of */p k s/* [b g s/z] as */W G z/* [β γ z] before *ㅡ/ㅗ* was a simple softening, similar to what is found in many languages, and the lenition of */t/* to the flap [r] was a weakening of the type found before an unstressed vowel among many speakers of modern English. It should be noted that the 25 stems ending in *···c-* (such as ***mac-*** 'meet') did not lenite and there is no reason to assume that they go back to ?*··· *ˈcㅡ/ㅗ-* rather than to the simple consonant.[52] Not all of the consonant-final stems we find in Middle Korean, then, were basically dissyllabic. To be sure *···c* might be taken as a cluster *ts*, or even a metathesized *st* (if the conditions for the metathesis can somehow exclude the single case of ***mast-*** 'take charge of' which later became a homophone of ***math-*** 'smell') parallel to the 11 stems of the shape *···sk-* which became modern ···kk-. It is not clear how Ramsey's revision would treat the 10 monosyllabic stems of the shape *···ph-*, the 16 of *···th-*, the 15 of *···ch-*, and the 22 of *···h-*. His statement (237) that "the last syllable of a stem (or morpheme) was automatically given prominence" (to which he assigns the high pitch) seems to mean all these stems will be of a dissyllabic type, for otherwise we would predict a High accent on the first and only syllable. The statement will have to be abandoned or revised. Perhaps the revision can handle the clusters as syncope: *···ph-* < *··· *ˈpㅡ/ㅗk-*, *···th-* < *··· *ˈtㅡ/ㅗk-*, and *···ch-* as *··· *ˈcㅡ/ㅗk-*.[53] But what about *···h-* itself? Are the 22 low *···h-* stems to be treated as **··· *ˈhㅡ/ㅗk-* > **··· *ˈh[h]-*? (This idea was suggested to me by Ross King.)

10. Morpheme-internal lenitions

10.0. We have described lenition phenomena at the beginning or the end of morphemes. The Middle Korean voiced fricatives could also occur within a dissyllabic morpheme. Within such morphemes and in etymologically obscure words there is seldom any evidence to confirm the suspicion that the voiced fricatives may be secondary rather than original. Neither accent nor vowel quality, for example, will account for the contrasts that are found in ***mozom*** 'heart' vs ***sa˙som*** 'deer', ***pel˙Gey*** 'bug' vs ***sol˙kwo*** 'apricot', and ***sa˙Wi*** 'shrimp' vs ***a˙pi*** 'father'. Yet dialect forms and related words often have the unlenited obstruents: **pelke(k)ci** and **pelkengi** for 'bug', **saypi** and **swaypi** for 'shrimp'. The phonograms of earlier versions of a few of the words show unlenited obstruents, too: in 1400+ Kwan-yek ***mozom*** is "***mo-com***" (Mun Senkyu 1972 #405) and ***sa˙Wi*** is "***sa-pi***" (#238). (Also, 1103 Kyeylim has the unlenited "***ma-ti***" for ***ma˙li*** > ***me˙li*** 'head'.) The simplest explanation is a merger of ***-W-*** and ***-p-*** into the modern dialect ***-p-***, and ***-z-*** and ***-s-*** into ***-s-***, for otherwise we could not explain the many cases of modern ***-p-*** and ***-s-*** that correspond to Middle Korean ***-p-*** and ***-s-***. But in the case of ***-G-***, the modern reflexes, when they occur, are unpredictably velar ***-k-*** or labial ***-p-***. The simplest explanation is that the modern dialects continue an older tradition while Middle Korean (in the attested dialect) interrupted that tradition by merging some cases of lenited ***-p-*** with the many cases of lenited ***-k-***, apparently on an unprincipled and sporadic basis. Given that, and the spotty phonogram evidence, the likely picture seems to be that the Middle Korean voiced fricatives were a local development, a change that affected the word stock only at random and was bypassed entirely by a number of the dialects. For an extensive discussion of lenition in the vocabulary, see Martin 1982/3.

10.1. Although the lenition of ***p k s*** led to three NEW phonemes ***W G z*** in Middle Korean, a related lenition did not lead to a distinctive new consonant. When the stems of the "irregular **t**" verbs developed the morphophonemic alternation that can be represented by the notation ***...T-*** = ***...l-V...*** / ***...t-C...***, no new phoneme was created; the flap [r] already existed as an allophone of /*l*/ according to explicit remarks in 1446 Hwunmin cengum haylyey 22 (see Martin 1992:51). Our ***...T-*** represents a morphophoneme that was part of the same phonetic change (the lenition) that led to the new Middle Korean phonemes ***...z...*** and

...W.... The weakening of the apical stop to a flap turns up in a few forms derived from verb stems, such as ***kwucilem*** (1447 Sek 19:30b) and ***kwucila˙m ol*** (1459 Wel 17:84b) 'scolding' (cf ***kwu˙cic-*** = ***kwu˙cit-*** 'scold'). A more complicated scenario is needed to account for **sēt-pulu-** 'be awkward/clumsy' and ***¨sel-˙Gwulu-/*-˙Gwull-*** < ****¨sel-pulu-/*-pull-*** < ****se˙lu-pulul-***. One hypothesis would say that the stem ***¨se(l)-/se˙l[u]-*** < ****se˙lu-*** vi 'stay/be unripe or unfamiliar' had a competing shape ****¨seT-*** = ****¨set-/se˙tu-*** < ****se˙tu-*** that has not otherwise survived. A more likely hypothesis would assume that **sēt-** comes from ***sē[l]-t*** < ****¨sel-s*** with the nominalizing/adverbializing suffix ***-˙(ᴴ/o)s*** as in ***ku˙lus*** 'by mistake; a mistake', which is from ***kulG-/kulu-*** < ****kuluG-*** < ****kuluk-*** adj 'be wrong' (also vt 'untie'), and ***cyangchot*** (1617 Sin-Sok hyo 6:25) = ***cyang˙chos*** (1481 Twusi 15:15a) = ***[˙CYANG-˙CHO]-s*** (1481 Twusi 16:57b, 25:13a) 'in future'.

Etymological examples of ***t > l*** are cited in Martin 1982/3:27 and 1992:57, including ***mwolan*** < ***¨MWUW-TAN*** 'peony', ***˙cho˙lyey*** < ***˙CHO-˙TTYEY*** 'order' (see §3.3), where the Chinese source clearly has a stop. We should keep in mind the possibility that an attested ***...l...*** may go back to an apical stop in exploring the etymologies of words such as ***˙pwolam*** 'sign, indication, mark, symptom' (< ***˚pwo-*** 'see' + ?). Also ****mwo˙lol-*** 'not know' (§6.2) < ****mwo˙ta a˙lo-***. The three new phonemes of the fifteenth century were local and ephemeral. They soon proceeded to vanish, starting with the poorly distributed ***...G...***, and thereby brought into juxtaposition the vowels that had flanked them. The flap resulting from the lenition of the apical persisted, for it was already an allophone of the existing liquid and had merged with that.

10.2. While the speech of modern Seoul does not retain the Middle Korean voiced fricatives, it offers evidence for the earlier distinctions in the shape of individual words, and in the irregular verb classes that come from the Middle Korean stems that suffered lenition of the final obstruent. The medial ***...z...*** elided and those Middle Korean stems that ended in a basic ***...z-*** = ***...s-*** / ***...z-*** are now the s-dropping stems with the stem alternants **...s-** / **...-**. The medial ***...W...*** became the semivowel ***...w...*** and the stems that ended in ***...W-*** = ***...p-*** / ***...W-*** now have the stem alternants **...p-** / **...w-**. The ***...G...*** also dropped, and that is why **i(y)o** < ***i˙Gwo*** can be used as a synonym of **ikwo**, the copula gerund. The stems ending in ***...T-*** = ***...t-*** / ***...l-*** continue the alternants **...t-** / **...l-**. But certain dialects treat all or some of the ***...z-***, ***...W-***, and ***...T-*** stems as regular (**...s-**, **...p-**, **...t-**). They also often have **...s...**, **...p...**, and **...t...** for other Middle Korean words attested as ***...z...***, ***...W...***, and ***...l...***

(lenited from ···*t*···). If the dialects used the unlenited obstruents only in verb stems, it could perhaps be argued that they have simply regularized the paradigms that were earlier irregular, but the existence of unlenited obstruents in some of the nouns makes that hypothesis unconvincing. The fact that certain words with Middle Korean ···*G*··· (including the verb stems ending in ···*lG*-) turn up in certain dialects with ···**p**··· rather than ···**k**··· suggests that ···*G*··· had unpredictably absorbed certain lenitions of ···*p*··· that should have become ···*W*···.

The lenition at the end of certain classes of verb stem is virtually without exceptions. Modern dialects will vary, however, in the extent to which they show regular paradigms for these "irregular" stems. One prominent example, even in Seoul, is the verb **wūs-** 'laugh', which ought to have come out as ***wū(s)-** with the infinitive **wue** instead of **wuse** since it was ***¨wuz-*** in Middle Korean, and some of the expected forms WITH the elision are attested in 1876. (See Martin 1992:59 for more on this stem.) For certain shape types there are minor variants in the Middle Korean attestations. In Martin 1992:234 I observed that the stem ***¨twoW-*** 'help' was often spelled as ***¨two[W]-***, with the labial consonant elided, though the endings attached as if it were still there: ***two˙[ ]a***, ***two˙[ ]on***, etc. At the time I thought that stem unique, but there are other cases, notably ***¨kwuW-*** 'bake, roast' spelled ***¨kwu[W]-*** in ***kwu˙[ ]e*** (1466 Kup 2:26a, 1475 Nay 1:67a; 1489 Kup-kan 1:2b, 1:40b, ... , 2:10a/b, 2:113b, ... , 2:107b) = ***kwu[ ]e*** [undotted] (1542 Pun-on 12b) and a variant of that stem ***¨kwo[w]-*** = ***¨kwoW-*** spelled ***¨kwo[W]-*** in ***¨kwo[ ]u˙m ye*** (?1517- [1]No 2:53b) 'roast and'. And the adjective stem ***¨kwoW-*** 'pretty, attractive, likable, lovable' is spelled ***¨kwo[W]-*** in ***¨kwo˙[ ]a*** (1462 [1]Nung 8:131b, 1481 Twusi 20:10b) = ***kwo˙wa*** (1481 Twusi 22:43a) = ***¨kwowa*** (1481 Twusi 22:43a) and in ***¨kwo˙[ ]on*** (1462 [1]Nung 10:63b) = ***¨kwo˙Won*** (1447→1495 Sek 11:36b, 11:41b; 1459 Wel 1:31b, 1:32a). For the derived adverb the expected shape ***¨kwo˙Wi*** (1449 Kok 49, 1459 Wel 7:18a) appears, but there are also examples of the spelling ***¨kwoi*** (1463 Pep 2:140a, 1475 Nay 2:1:12a) and even of ***¨kwoyi*** (1475 Nay 2:1:12b). It is quite common for the labial to be omitted in derived adverbs/nouns, and that will account for the existence of ··· ***ta˙i*** as well as ··· ***ta˙Wi*** '···-like' and ***kas.ka˙i*** as well as ***kas.ka˙Wi*** 'nearby'.

Ramsey 1978:47-9 makes persuasive arguments for the lenition hypothesis and observes (48) some interesting exceptions in Seoul forms. We must pay attention to the question posed by those Middle Korean words which were spelled with ···*s*···, with ···*p*···, and (after *y*,

l, or *s*) with *---k-* rather than with their lenited counterparts. Ramsey 1978:46-7 offers an extensive list of words for which we lack evidence that the obstruent was ever lenited:

kwosoy 'coriander', ***kwosa˙li*** 'bracken', ***mwosi*** 'ramie cloth', ***nwosay*** 'mule', ***susung*** 'teacher', ***pwosyen*** 'socks, cotton bootees' (for some etymological suggestions see Martin 1996b), ***ti¨say*** 'roof tile', ***ka˙som*** 'breast',[54] ***ka˙soy*** 'thorn', ***ta˙som*** 'step-(father/son)' < 'next' but notice the elision in the modern form **taum** which, as Ramsey 1978:48 comments, must be from an unattested earlier ****ta˙zom***,[55] ***ta˙sos*** 'five', ***i˙solas*** 'cherry', ***kwu˙sul*** 'bead', ***ki˙sulk*** 'border', ***pe˙sus*** 'mushroom' (see n. 44), ***pye˙sul*** 'government post', ***ye˙sus*** 'six', ***i˙sul*** 'dew', and ***sa˙som*** 'deer';

nwu˙pi 'quilting', ***epe˙zi*** 'parents', ***ka˙poyyaW-*** 'be light in weight'. ***ke˙pwup*** 'turtle', ***kwo˙pi*** 'a bend', ***kwu˙pi*** 'a bend', ***na˙poy*** 'butterfly', ***ne˙puy*** 'width', ***ni˙pul*** 'quilt', ***sa˙pal*** 'bowl', ***cwu˙pi*** 'kind', ***¨pwopoy*** 'treasure', and ***a˙pi*** 'father';

cwulki 'stem', ***˙ptalki*** 'strawberry', ***˙ptelki*** 'bunch', ***˙psulkey*** 'gall', and ***˙hwalkay*** 'wings'.

To Ramsey's list we can add: ***syepang*** 'male; husband' (~ ***mac-*** 'take a husband'), ***apa ¨nim*** 'father'; ***elkwul*** 'face', ***nilkwup*** 'seven', ***¨kal˙ki*** 'mane', ***¨swol˙ki*** 'seam', ***˙tal˙kwo*** 'ground rammer'.

Except for ***ka˙poyyaW-*** the nonleniting words are all nouns, I believe, and Korean borrows nouns more readily than verb stems. Some of the exceptions could be due to borrowing, if suitable donor forms can be found. The noun ***syepang*** 'male; husband' is said to be from Chinese ***SYE-PPANG*** 'writing room', ***sa˙pal*** 'bowl' is taken from ***SYA-˙PALQ***, and ***¨pwopoy*** 'treasure' is from ***¨PWOW-˙PAY***, while ***susung*** 'teacher' looks like a corruption of ***SYEN-SOYNG***, which is the source of **sensayng**. Although the verb stem ***nwu˙pi-*** 'to quilt' is attractive as a cognate possibility for pJ ****nupa-*** 'sew', the Korean verb (not attested before 1677) is secondary to the noun ***nwu˙pi [˙wos]*** 'quilted garment', originally referring to 'a monk's garb of quilted pants and vest', which seems to be a corruption of ***˙NAP-QUY***. The noun ***sol˙kwo*** 'apricot' is probably a loanword, but its source is unclear; cf Jurchen *šil[h]u* = written Manchu *syulhe* 'pear' [Norman 1967] = Sibe *s(y)ulehee/suluhuu* 'apple' [Yamamoto 1969]; Běijīng *guǒ* 'fruit', Korean **silkwa** = ***¨kwa˙sil*** 'fruit' < ***¨KWA-˙SILQ***; Běijīng *shāguǒ* = Korean **sākwa** < ***SA-¨KWA*** 'apple'. Perhaps an incorporated particle stands behind the voiceless sibilant in ***sa˙som*** 'deer': ***sa[l] s*** ... '(a)live ...'.[56] The word ***a˙pi*** 'father' is a compound of ***ap*** 'father' + ***˙i*** person', as Ramsey

observed. The words ***kwo˙pi*** and ***kwu˙pi*** are derived nouns from the nonleniting stems ***kwop-*** and ***kwup-***, and ***ne˙puy*** is the derived noun of the nonleniting stem ***nep-***. The noun ***ni˙pul*** 'quilt' is probably from the imperfect adnominal (= prospective modifier) of the nonleniting stem ***nip-*** 'wear'. And ***ti¨say*** 'roof tile' is probably a compound from ****ti-¨say*** (Ramsey 1978:47) = ***til*** 'tile' + ***¨say*** 'thatch' (LKM 1991:28). According to LCT 1971:71-2, ***ti[¨]say*** (1481 Twusi 20:11a) > ***cisay*** (?1720- Waye 1:32a) > ****ciay*** (with lenition) > ***kiay*** (hypercorrecting the palatalization, cf Martin 1992:47), also > ***ciwa*** (1780 Mulpo) and (contaminated by ***¨NGWA*** 'tile') > **kiwa**, a hypercorrection of the palatalization, and (further contaminated with ***˙KAY*** 'cover') **kāywa** = ***˙KAY-¨NGWA***. The numbers ***ta˙sos*** '5' and ***ye˙sus*** '6' seem to contain an etymological suffix ***-ʷos***; they occur in several shorter variants.

Of the leniting words, a few are quite obviously of Chinese origin: ***noy˙zil*** (~ ***s a˙cho˙m ol*** 1482 Nam 1:40a) 'tomorrow' < ***LOY-˙ZILQ***; ***¨moyzyang*** (1463 Pep 2:5b, 2:189b) 'always' < ***¨moy*** < ***¨MOY*** 'every (one)' + ***syang*** < ***SSYANG*** 'regularly'; and perhaps ***coy˙Wyek*** (?1468- Mong 10a; 1462 [1]Nung 5:72a; ~ ***¨kwol*** [placename] 1445 [1]Yong 49-50) > **co.yak (tōl)** 'gravel', though I am unable to identify the characters. The word ***sa˙Wi*** 'shrimp' brings to mind [Manchu] Sibe *syamii* < Běijīng *xiāmi* and Manchu *sampa* (cf LKM 1958:116, #183). Words of uncertain etymology include ***tu˙Wuy*** (1446 Hwun 28a) 'a gourd used as a jar', ***nwun s twu¨Wey*** 'the bulge of the eyelid' (?1468- Mong 2b) – cf dialect **nwun-twupey** etc (Choy Hak.kun 1978:332), ***¨syeWul[h]*** (1445 [1]Yong 49) 'capital city' = ***¨syewulh*** (***¨syewul˙h ul*** 1481 Twusi 10:36b), ***˙sukoWol*** (1445 Yong 35) 'countryside, district', ***i˙Wu(l)-/i˙Wu˙l[u]-*** < ****i˙Wu˙lu-*** 'wither'; ***so˙zi*** 'interval', ***sku˙zi-*** 'irrigate' (?< intensive ***s-*** + ***ku˙zi-*** 'hide it'), ***kye˙zul(h)*** 'winter', ***kozol(h)*** 'autumn'. The noun ***puzulum*** 'boil, abscess' is derived from ***puz-*** = ***pus-/puz[u]-*** < ****pusu-*** 'swell'. The word ***howo˙za*** < ***hoWo˙za*** 'alone' is probably from ***hon ˙po[l] ˙sa*** 'just one layer'. Modern **honca** (dialect **hopun-ca**, **hapun-ca**) < ***hwon˙ca*** (1518) < ***howon˙za*** (1475) has a nasal to be accounted for, but the nasal in the string of **---nc---** is thought to be secondary in many instances, as in ***a(n)c-*** 'sit', etc. (see Martin 1992:48).

10.3. As I see the scenario, proto-Korean had voiced allophones [b d g dz] in word-medial position for the otherwise voiceless /p t k c/, much like modern Korean. We must assume that the sibilant was voiceless medially as well as initially. In the central area only, a wave of lenition set in such that before the minimal vowel ***ʷo*** (within a stem

or noun) medial [b] and [g] weakened to [β] and [γ], and [d] to the flap [r]. Then in all parts of the peninsula a syncope elided the stem-final *ㅸ/o* and converted stems of the shape *CV˙Cㅸ/o-* to *¨CVC-* when an ending was attached that began with a consonant or with *ㅸ/o*. (The sole example of the latter is the honorific bound auxiliary *-ㅸ/o˙si-* and that came about through the restructuring at Stage 4 in §2.0.) Before a consonant (thus not before *-ㅸ/o˙si-*) obstruent phonemes assumed the articulations appropriate to syllable-final allophones, voiceless [p t k ts s], but almost immediately the syllable-final affricate [ts] reduced to [s]. At a later time (around the middle of the 16th century) all cases of syllable-final [s] lost their sibilance and merged with syllable-final /t/. Before a vowel in much of Korea the obstruents remaining from the syncopation kept their original allophones [b d g dz s]. In the central area the syncope created a contrast between [β] and [p], [z] and [s] so that two new phonemes were added to the system, */W/* and */z/*. The velar stop [g] was weakened to [γ] as the result of syncope in certain noun shapes (like *azo / azG···* < **asok* 'younger brother' and *nwolo / nwolG···* < **nwolok* 'roe deer'), and of the attachment of such endings as *-˙kwo* to verb stems ending in *···y-* and sometimes *···i-* or to stems of the shape *···l-* < *···l[ㅸ/o]-*, so that a contrast developed between [lg] and [lγ], between [yg] and [yγ], and between [sk] and [zγ]. Meanwhile the group of nouns with medial lenition expanded to include, at least sporadically, nouns with nonminimal vowels in the second syllable.

The crest of the lenition wave was reached by the middle of the 15th century. Thereafter a gradual ebbing set in, as various unlenited nouns and verb forms from surrounding regions invaded the central area and, in some cases, prevailed over their lenited counterparts. The latter were undergoing further erosion, in any event, with the complete loss (elision) of the phonemes *G*, *z*, and most cases of *W*. How can our tentative proto-Korean reconstructions take into account the morpheme-internal obstruents for which lenited versions are unattested? Without prejudicing the individual explanations that may eventually remove the need for that question, I suggest the following. We assume that the wave of lenition reached all morpheme-internal shapes of the type **CVCㅸ/o(···)*, nouns as well as verb stems, but had only started to make inroads into other noun shapes before it ebbed, leaving the strongest mark on the sibilant, with fewer examples for the labial and the velar, and almost none for the *···t···*. Our job then is to mark in some way just those nouns of the susceptible type that failed to show

lenition, most of which involve the sibilant. Suppose that we assume (perhaps validly in some cases) an elided consonant, either ***[C]*** or more specifically ***[h]***, and let the cluster block the lenition:

ka˙s[h]om 'breast', ***sa˙s[h]om*** 'deer', ?***ta˙s[h]om*** 'next', ***ta˙s[h]os*** 'five', ***ye˙s[h]us*** 'six', ***pe˙s[h]us*** 'mushroom', ***i˙s[h]ul*** 'dew', ***ki˙s[h]ulk*** 'border', ***pye˙s[h]ul*** 'government post', ***kwu˙s[h]ul*** 'bead'; ***i˙s[h]olas*** 'cherry'; ***kwos[h]oy*** 'coriander'

na˙p[h]oy 'butterfly'

The explanation for an unlenited obstruent within an inflected stem will usually involve an etymological boundary, as seems to be likely in ***ka˙poyyaW-*** 'be light(weight)' (cf dialect **ka(y)-kap-/-kep-/-kwup-/-kwop-**), and some of the noun examples must be similar: ***ni˙pul*** 'quilt' < ***nip-ul(q)*** 'to wear', ***ne˙puy*** 'width' < ***nep-˙uy*** < ***nep-*** 'be wide'. There is no need to invoke a shwa secundum in the form of a postvocalic ****[¼]*** in order to account for those words that fail to show lenition within a morpheme when the following vowel is nonminimal. As stated above, the wave of lenition was fully realized only before the minimal vowel. Individual explanations are required for why some nouns escaped, others got drenched. A good many of the exceptional cases (without the lenition) are likely to have had unexceptional variants (with the lenition) that did not get into the Hankul corpus. Such cases crop up in modern dialect variants with the lenition, where Seoul and the Hankul corpus fail to show the word was ever subject to the weakening, for example in the reported instances of [z] in North Hamkyeng speech (see King 1991 and Martin 1992:29, 59).

10.4. It would be a mistake to set up additional phonemes for proto-Korean just because we face difficulties in explaining the individual exceptions. It may be instructive to consider a similar situation in a different language. There was a time when /s/ and /z/ were not distinguished in English, for voicing in the Old English fricatives was determined by the environment. Today, as a result of borrowing and the reshaping of morphemes, all dialects distinguish the two sibilants both initially ("seal" vs "zeal") and medially (no native speaker says "possible" with a voiced sibilant), yet the spelling is a poor guide, for both "s" and "ss" are often pronounced like "z": I think everyone makes "[a] dessert" sound like the verb "[to] desert". I usually say [s] for the spellings "-ce" and "-sce-" but one of my teachers, the late Bernard Bloch, pronounced [z] in "discern" and "discerning"; I have also heard "recent" with [z]. All speakers, I think, use the voiced [z]

in "dissolve" despite orthographic and morphophonemic evidence that the sibilant should be voiceless, as it is for most speakers in the related word "dissolution". Moreover for many words I have noticed a widely scattered trend (probably new rather than surviving) to voice between vowels the historic /s/ that is traditionally – and usually in my own speech – voiceless. Competing versions occur both between speakers, irrespective of geography, and for a single speaker. I say an [s] in "philosophy" and "philosopher" but a [z] in "philosophical"; my daughter, who IS a philosopher, uses the [s] in all three words. Neither geography nor religion will tell you whether the next TV newscaster you hear will say "Jerussalem" or "Jeruzalem" – or let the two freely vary. Only yesterday I heard a national newscaster consistently say "Bossnia" for what until then I had heard only as "Boznia". On the following local news, a different speaker doing a commercial for a Portland (Oregon) Isuzu car dealership repeatedly praised his product as "Izuzu", a pronunciation that appears to be more widely used than I had realized; this was the first time I observed it.

The voicing extends to clusters: "asbestos" can be heard with [sb] or [zb], and while I keep the word "disbursed" with [sb] distinct from "dispersed" [sp] by clearly distinguishing the second consonant, many speakers use [zb] for both words. Similar remarks apply to "sh" as [ž] and "ch" as [dž], regardless of the etymological source. In America "congratulations" has been largely replaced by "congrajulations", though the abbreviation remains "congrats" despite "grads" for the plural noun "the graduates".

The intervocalic voicing phenomenon is widely heard for the apical stop and occasionally even for the velar. Joos 1962:154 reported some six or eight common words with "voiced k" in his speech, including "ticket", "package", and "indicative". The word "spigot" is a variant of "spicket", while "chugalug!" comes from "chuck-a-luck". And too notorious to need examples is the American replacement of intervocalic ···t··· by flap [r], with the subsequent/consequent merger with ···d···. An interesting voicing of a cluster is that of [bd] for my [bt] for the standard [pt] in "Baptist". Most Baptists seem to use either [bd] or my version [bt] in "Baptist" itself but less often in "baptism" and the verb "baptise", whether stressing the first or the second syllable. Do not be surprised to find your alma mater referred to as a "universidy", a "univerzity", or even a "univerzidy", where administrators complain of the high cost of its "electricidy", "electrizity", or "electrizidy" and show little interest in the extent to which voicing may or may not have

been "significant" or "signifigant" in the earlier versions of English words.

11. The Macro-Altaic hypothesis

11.0. The title of Miller's 1971 book, the author tells us, mimics that of Holger Pedersen's 1938 work. Pedersen set out to persuade other linguists that Hittite was just another Indo-European language, rejecting Sturtevant's judgment that it was a sister language and that both Hittite and Indo-European were daughter languages of an "Indo-Hittite".[57] Miller set out to demonstrate that Japanese is just another Altaic language – and so, presumably, is Korean. The appropriate methodology, we are told, is to compare Old Japanese (i.e. the central dialect of the 7th and 8th centuries) with the "sister" languages and thereby enhance and perhaps revise the reconstruction of proto-Altaic, rather than compare the reconstructions of proto-Altaic with those of proto-Japanese, a language Miller thinks unreconstructible, and proto-Korean, of which he says nothing, though he does make use of some of the proto-Korean-Japanese reconstructions tentatively set forward in Martin 1966, and his chart (Miller 1971:44) makes provision for proto-languages at appropriate nodes of the family tree, flawed only by his failure to recognize proto-Japanese as the ancestor of "Old Japanese etc." and "Ryūkyū etc.". Pedersen's attempt met with a favorable reception by comparative linguists who were put off by the term "Indo-Hittite" and found it inconvenient to change their working assumptions to accommodate Sturtevant's new arguments, the clearest summary of which was made in a 1938 lecture later published as Sturtevant 1962.

From the viewpoint of public relations the Pedersen book was a success, and most of the specialists today either pay it lip service by including as part of Indo-European the Anatolian languages, of which Hittite was the first to be explored, or hedge by admitting that the Anatolian languages split off at a somewhat earlier time and that the "other Indo-European languages" shortly thereafter shared certain innovations, notably the loss of a laryngeal phoneme attested in Anatolian and separate developments in the tense-aspect system. The late Warren Cowgill (e.g. 1972) was one of the more perceptive of the critics who saw the illogic of the argument for anyone who believes in the Stammbaum (family-tree) model of how languages are related to each other. That model implies a proto-language for every node of the

tree, however small the differences from the next higher node. Despite its catchy title and theoretical pedigree, Miller's book did not receive the same enthusiastic, if misguided, reception that Pedersen's enjoyed, in part because the Altaic hypothesis itself was (and is) regarded by many comparativists with a skepticism that is fueled by the wariness of prominent Turkologists and Uralicists, and in part because of the relative inaccessibility of the research data on East Asian languages, which they are asked to accept on faith.[58]

It is small wonder that Miller was discomfited at the 1981 defection from the Macro-Altaic enterprise of his sometime collaborator John Street, a Mongolist well trained in Indo-European, who pointed out that there is indeed something unique about the Japanese situation: namely, the small inventory of phonemes into which, in seeking cognates, the much larger inventory of the Altaic languages must be mapped. The multiple mergers of Altaic consonants in the proposed Japanese cognates make it difficult to decide among the competing possibilities, as Street cogently points out, and that has provided the opportunity for speculation to run wild.[59] (See Helimsky 1993:114 for a Tungusic word which Miller 1991a:196 relates to a Middle Japanese term but Starostin 1991:293 compares to a quite different Japanese form "which hardly seems more persuasive". Both etymologies are fanciful.) Moreover, Street is disturbed that investigators have found no "smoking gun" that will indict Altaic as the obvious progenitor of Japanese. (The mangled metaphor is mine, not Street's.) He bemoans the lack of a clincher like Verner's Law, the important discovery that in Germanic the proto-IE voiceless stops split into voiced fricatives and voiceless obstruents under conditions definable only in terms of features not preserved as such in Germanic, namely the accentual phenomena of Greek and Sanskrit. The conclusion (1991:202) of Miller's "spirited defense" of his position, as Victor Mair (Word 45: 97) characterized it, may well survive as Miller's Law: "How many Verner's Laws does an Altaicist need? The answer is none."

A stronger case could have been made if Miller had pointed to the genetic relationship of the Austronesian languages, for which no smoking gun or Verner's Law has been adduced. Indo-Europeanists readily accept the Austronesian family but continue to be skeptical not only of the Macro-Altaic hypothesis that would embrace Korean and Japanese but of the lesser Altaic hypothesis itself. What causes the wariness? It is not just the righteous fervor and rich rhetoric of some of the True Believers (the good guys), nor is it a conspiracy of infidels

(the bad guys, who are known as the "anti-Altaicists"). The time depth of Austronesian is relatively shallow (less than that of Indo-European) and, despite the great variety of the scattered languages, the sound correspondences may be complicated but they are well attested, they are found in noncontiguous geographical areas that enable ready identification of most subgroups, and they are generally agreed upon. The situation for Altaic is less reassuring, more like that of Macro-Austronesian under the hypothesis that Thai and Kadai (and even Japanese!) must be brought into the picture.

The areal distribution of the Altaic cognates proposed by Poppe led Doerfer 1973 to dismiss the sound correspondences that had been adduced as indicating little more than borrowing between contiguous languages. In Martin 1966 I sought a methodology that would emphasize the discovery of interlocking phoneme correspondences between Korean and Japanese within the vocabulary that we can agree is fairly basic and in particular prized the resemblances found in verb roots, which are highly resistant to borrowing in both languages, as they are also in Tungusic, Mongolian, and Turkic – and many of the other human languages. Since then I have dwelt on the importance of the internal reconstruction of each language group, in particular the two with which I am most familiar, concentrating on the verbs, where I think lexical comparison can be most productively pursued.[60] Relevant here is the observation of Hoenigswald 1990:379: "The history of Indo-Europeanist work shows us ... the de facto dominance of internal reconstruction." Miller downplays the value of internal reconstruction within a single language and he distrusts comparisons that involve only two languages.[61]

11.1. It would be nice if the Korean alternation of **t** and **l** (and of ***p*** and ***W***, of ***s*** and ***z***) could be explained just on the basis of an external environment – found in Tungusic, say, or in Japanese. But that does not seem to be the case. The alternation is an internal development that has no pre-history before proto-Korean. The apt remarks of James Scott 1891 are still cogent today:

> To what family or class of languages Corean belongs is a question easier asked than answered. With more of assertion than proof, its place philologically has been assigned as one of a group comprising the South Turanian, and closely allied to the Dravidian languages of the Deccan of India. But similarity in certain points of grammatical construction cannot alone be invoked as deciding the class or family of any language,

> especially where in etymology there is no identity of roots whatever. And this is exactly the position where our knowledge of Corean at present rests.

With more of assertion than proof, I fear, is a characterization of much of what has been written on language relationships in East Asia. In reference to Korean and Japanese, Scott added these sobering remarks: "Fortuitous resemblances occur, but even with English there are not wanting such coincidences of sounds with similarity of meaning, e.g. the Corean word 'mani' corresponds with the English word 'many', nearly in sound and exactly in meaning." (Finnish, too, has a word *moni* 'many'.)[62] To that we can add the word **myech**, which sounds much like 'much' and carries much of the same meaning.[63]

11.2. In some or all of what I have said above, I may be wrong. (If that remark, seldom seen in Altaic discussions, gets plagiarized, I will not be offended.) I realize that many of the comparisons I offer, both here and in forthcoming publications, can be taken as support for the view that the languages under discussion are all genetically related, but I caution that others of the comparisons cast doubt on that conclusion.

Let me summarize my current position on the controversial issues. I am somewhat suspicious of the Altaic hypothesis as it is currently enshrined but I am willing to use cautiously Poppe's proto-Altaic reconstructions, with the revisions made by Street and others, at least as a heuristic device. I do not believe that my 1966 paper proved the genetic relationship of Japanese to Korean, nor do I believe that Miller 1971 proved its relationship to the Altaic languages, though both these works contain much worthy material of use for further research, along with much that should be discarded. I continue to believe that the relationship between Japanese and Korean is closer than that of either to any other language,[64] even though it now appears likely that the two proto languages did not, as I once thought, share the feature of distinctive pitch accent.

I agree with Ramsey that the verb stems of proto-Korean were not marked by accent and that much of the accentuation of the nouns, and particularly the monosyllabic nouns, was heavily determined by their segmental shapes. I agree with Whitman that the onset of high pitch was probably distinctive for dissyllabic nouns, despite their preference for a basic Low-High melody.[65] Whitman and I are in agreement that proto-Japanese had both a feature of pitch register (which Korean did not) and a feature of accentual locus. Though vowel length is a plausible interpretation of the low register of Japanese, there has been

no convincing demonstration that it corresponds to vowel length found in the Altaic languages despite the recent attempt of Starostin ?1995 and the earlier one of Murayama 1983 (reprinted in Murayama 1988: 63-90). Unlike the pitch register, the accentual locus was irrelevant to proto-Japanese verb stems, and further research may show that, as in Korean, the noun accent is more largely predictable in terms of other features than we have realized.

I do not agree that proto-Korean had distinctively voiced obstruents either initially or medially, though I suspect that between vowels the plain obstruents were always voiced PHONETICALLY.[66] I think the consonant structure of proto-Korean was relatively simple and similar to that of proto-Japanese, in contrast to the richer structure of the three language families of Altaic. The canonical shapes of Korean include closed syllables of the CVC type, looking like many of the proto-Altaic reconstructions cataloged in Street 1974, but the revision of our views on the verb stems makes more of them look like the proto-Japanese reconstructions. To be sure, the dominant **CVCV-* pattern of the Japanese roots would look less "Polynesian" if we treat the ubiquitous **-a-* as the automatic default, in effect epenthetic; see Martin 1987: 671. If consonant releases are regarded as vowels, some of the Altaic languages will look more like Polynesian, too, as found in the Dagur description of Martin 1961. See the pertinent remarks in Street's 1963 review of that work and his description of Kalmyk shwa (Street 1962). Historical spellings in French conceal shwas that may or may not be phonemic; whether so treated or not, they are unreliable guides to the history of a particular word. Cyrillic transcriptions make languages of the former Soviet Union look more like Russian than warranted, and they are based on sociopolitical pressures to create a prescriptive "cultural language", a term still very much alive in its North Korean translation ***munhwa-e***.

At this time I have nothing to say about the vowel systems, but there may be something of interest to report in the future. As to vowel harmony, that seems to have developed independently in each of the families here discussed, except Japanese, where there is but scant evidence that it ever existed. Cf Hattori 1948a:117-8, 1982. Contrary to the prevailing view, I think that Korean always had vertical vowel harmony (high vs low tongue = closed vs open jaw) rather than horizontal (front vs back = advanced vs retracted tongue), and that the importance of the vowel shift proposed for pre-Hankul Korean has been exaggerated, though Janhunen (1981, 1994a) accepts this "vowel

rotation" as a fact. The external evidence for the rotated values of the earlier vowels is inconclusive, pointing in either direction, and all too often selected only for the direction favored by the linguist who is making use of the evidence. The internal evidence is unconvincing.

For the agglutinative languages under discussion I do not think it is fruitful to pursue "THE case system" of the nouns or to seek "THE inflectional system of the verbs", as if we were still dealing with Indo-European, for the joining of the noun or the verb with their markers gets looser and looser as we look back through the internal histories, especially those of Japanese and Korean, and the markers come and go, freely sharing or dispersing functions at different times and in different dialects.[67] In both Japanese and Korean the most common marker for the direct object has always been zero (that is, nothing at all), and the marking of the subject is largely masked by particles of focus except in embedded or subordinated clauses. It is vain to seek evidence of real apophony; it isn't there.

Much exploration of the internal history and external comparison remains to be done for each of the language families, with an emphasis on verb forms. The etymologies of RUN and WALK look promising, with the internal adjustments for Korean suggested in §3.0. I agree with Janhunen (1994a:237) that there is no reason a language cannot be an isolate, whether it is orphaned or not. The question of monogenesis of languages cannot be answered by the disciplines of linguistics, anthropology, archeology, or psychology. If it is answerable at all (and it well may not be), we will probably have to look to the biological sciences to discover what it is that makes language a compelling and uniquely human trait. Related languages do not become unrelated, but if they are separated by a long period of time they may become unrelatable. Languages, unlike their speakers, do not carry DNA, so that claims of genetic relationship are at best judgments of probability inferred from pieces of evidence that vary in the value each brings to the proof. To prove a genetic relationship between languages it is not enough to set up a series of phonetic correspondences between words of similar meanings, even an interlocking set such as that in Martin 1966, for the possibilities of chance resemblance and borrowing are not easily dismissed. Every word in the lexicons of classical Chinese and of modern English is a latent or overt morpheme of modern Japanese, dressed up in a newly assigned phonetic uniform that is congenial to the Japanese speaker and is truncated or expanded to fit the canonical patterns of his language. Although not trilingual, the

Japanese act as though they were. Yet until the latter decades of the 20th century few Japanese had heard a native speaker of English or of Chinese, to say nothing of the Chinese spoken (or read aloud) 1500 years ago. The prescriptive system of borrowing was by way of the eye, not the ear, and it was filtered through an imprecise knowledge of the traditional phonological systems of the foreign lands. Similar remarks can be made about the digestion of Chinese loanwords in Korea, where literary Chinese was imported and cultivated by scholars who had little or no opportunity for exposure to Chinese speakers.

11.3. I do not share Miller's (1994b) pessimism about comparative work in the languages of northern and northeastern Asia, nor did I share his earlier optimism. I am delighted to see younger scholars taking an active interest in the many questions that arise in examining these languages (with emphasis on the word "questions"), and I find the lively interchange of differing views of such investigators as Vovin and Janhunen both stimulating and productive. There is no need for Miller to feel beleaguered as virtually the last of the pre-Nostratic Altaicists,[68] for others are working within less ambitious frames of reference, if not necessarily the ones he advocates. Adopting an unsacerdotal and less confrontational approach to questions of language relationship will bring about more enduring results than much of what is found in the recent literature. The kind of work on details we need is less ego-enhancing than that of concocting grandiose theories to seek proto-Human – or even proto-Indo-Squirrel, to quote an endearing if irreverent quip made by a colleague who is no longer with us. Among the preliminary tasks are the preparation of semantic indexes to the various forms and reconstructions.[69] These jobs call for drudgery with attention to precision,[70] and the work must be its own reward.

It is easy to assert a genetic relationship, but proving it can be daunting task. Sets of phonetic correspondences are not enough, even in vocabulary thought to be persistent, nor is the retrieval here and there of bits and pieces of purported morphology. This year there will be no Nobel Prize in comparative Altaic.

Notes

[1] This study has much benefited from extensive discussions with J.R.P. King, S. R. Ramsey, L.A. Serafim and A. Vovin, as well as from their publications and those of John Whitman, among others. I am grateful for ideas and information from Rufus S. Hendon, Stanley Insler, Stephanie Jamison, Craig Melchert, and Hugh M. Stimson. Familiar abbreviations are used in citing forms:

J = Japanese
K = Korean
Ma = Manchu (usually written Manchu when unspecified)
MCh = Middle Chinese (as codified from 600 and later)
MK = Middle Korean (as attested in Hankul texts from 1445)
Mg = Mongolian (written, "general", or Khalkha when unspecified)
OCh = Old Chinese (as reconstructed from texts of 1000 BC and later)
OJ = Old Japanese (the central dialect in texts of around 600-800)
OTk = Old Turkic (as found in texts from 800 and later)
pA = proto-Altaic
pJ = proto-Japanese
pK = proto-Korean
pKJ = proto-Korean-Japanese
pMg = proto-Mongolian
pTg = proto-Tungusic
pTk = proto-Turkic
Tg = Tungusic (either proto-Tungusic or "general" Tungusic)
Tk = Turkish or Turkic (either proto-Turkic or "general" Turkic)

[2] Modern Korean forms, printed in boldface, are written in the Yale Romanization: **wu** = [u] but abbreviated to just **u** after **p ph pp m y**; elsewhere **u** = [ɨ]; **o** = [o]. But forms written before 1933 and those from Ceycwu island, printed in bold italics, are represented in a version of the Yale system that permits differentiation from ***wo*** of the now lost vowel called **alay a** (= ***alay o***), a low back vowel which once functioned as the unrounded counterpart of [o] and the low counterpart of [ɨ]: ***u*** = [ɨ] everywhere, ***wu*** = [u], ***o*** = [ɔ], ***wo*** = [o]. The Middle Korean voiced fricative phonemes are represented by ***W*** (labial), ***z*** (apical), and ***G*** (velar or laryngeal); the morphophoneme ***T*** represents the alternation of the phoneme ***t*** with ***l*** (and **t** with **l**). Following the 15th-century spelling conventions, a single dot (˙) marks high pitch and a double dot (¨) marks a rise from low to high; the low pitch is

left unmarked, and the low dot (the period) is used only as a device to separate symbols when they might be misinterpreted as a dyad. The hollow dot (°) marks a verb stem of the "High/Low" type, and the double hollow dot (°°) marks a verb stem that is rising but just low before certain endings. Readings of Chinese characters are in bold italicized small capital letters; they are taken from the prescriptions of 1447 Tongkwuk, which tried to impose certain distinctions of Middle Chinese that were ignored in Korean speech. Forms from languages other than Korean are cited in italics. The designation of Korean texts cited follows the practice of Martin 1992:401-6. In accentual patterns the notations H and L represent high and low pitch, respectively. The symbol C represents any consonant, and V is any vowel or vocalic nucleus. While brackets and slashes are used to delimit phonetic and phonemic transcriptions, the slash is used also to show alternants ("or") and the brackets are used to delimit elided strings in certain formulations: notations of the type *[˝]···* refer to a suppressed rising tone (low rather than low-high). Japanese forms are cited according to the notations of Martin 1987. Forms from other languages are cited as found in the sources with only minor adjustments, such as *ng* for *ŋ*, and *f* for OJ "F", which was surely pronounced [p]. In citing Mongolian, the symbol *h* is used only for written/Middle Mg, Yögür, and Bao-an, or to write the Buryat *h* < **s*; otherwise the velar fricative/affricate is written *x* (including the backed version Poppe writes as *q*). The Tungus notations of Tsintsius include a dotted Cyrillic i which is here written *ï* (cf Benzing 1955:21) and a dotted Roman u, here written *ü*; there is also a dotted "hard sign", here written *ə*. I have de-Prussianized German nouns in titles cited in the Bibliography, Romanized the Russian titles, and provided English translations for non-English titles.

3 Vovin 1993 would interpret the triangle symbol of Middle Korean as representing a palatal nasal rather than a voiced sibilant. The idea is imaginative but, I fear, mistaken. In native Korean verb forms and compounds, the symbol clearly represents an alternant of *s*, and in view of the other voiced fricatives of Middle Korean an alternation of [s] with [ñ] is quite unlikely. As an initial in Chinese loans the symbol was used to represent the Middle Chinese "naso-palatal fricative" symbolized by Karlgren as ńź. But while this developed into n- in the south of China, in the north it became ž- and eventually r-; the syllable zi > ž > r is a special case of that. The Japanese borrowed the group

of morphemes with this initial as both *zy-* (from north China) and *ny-* (from south China), but Koreans adopted only the northern version. In the 15th century the Chinese loanword ***LOY-ˑZIIQ*** (1459 Wel 7:16a) was nativized as ***noyˑzil*** (1482 Nam 1:40b), and Tayshin 1898 has [rasil] for 'tomorrow'. It would have required delicate technique for speakers of Middle Korean to keep ***¨neys*** 'four' distinct from ***¨seys*** 'three' if the latter were ***¨ñeys***, which would (less often) clash also with ***¨nyey s*** 'of old'. Vovin would get around the problem of 'four' by interpreting its initial ***n-*** as the [d-] that he and King have heard from Korean dialects in the Soviet Union. But that is a well-known phonetic phenomenon whereby the nasal feature of word-initial **/n/** (most often before **i, y,** and **ey** but sometimes before other vowels) and **/m/** (most often before **w, wu,** and **o** but sometimes before other vowels) is prematurely shut off before the release of the consonant. See Martin 1992:27-8. The [n^{d}...] and [^{n}d...] and (if heard) [d...] are simply allophones of **/n/**, just as [m^{b}...] and [^{m}b...] and (if heard) [b...] are allophones of **/m/**, as in the widely heard [^{m}bɔ] = **m(w)e** 'what'. And the allophones are heard for initial **/n...-/** and **/m...-/** not only in native Korean words such as **ni kes** 'yours', **ney kes** 'yours; (= **nay kes**) mine', but also in Chinese and other loanwords: **nēykwuk** = **nāykwuk** 'internal', **nikheyl** 'nickle', **mun** 'gate, door', **mōsyen** 'motion'. Starostin 1991 (253, 257) offers three Korean etymologies with intervocalic palatal *-ñ-*: ***moñom*** based on MK ***mozom*** 'mind; heart [in MK also the organ]', ***nañ(o)-*** based on MK ***¨naz-*** = ***¨nas-/naˑzo-*** < ***naˑso-***, and ***puñe-*** 'grey' based on a modern form that is part of an etymon **(p)pū.yeh-/(p)pō.yah-** 'hazy, dim, blurred; milky-white, pearly'. That etymon goes back to MK ***pwuhuyye ho-*** < ***pwuˑhuy-*** adj 'pearly grey; misty' (***pwo[ˑ]hoy-*** is attested in 1649- Makyeng 1:8b), which obviously contains the stem ***ˑhʷoy-*** 'white'; it is unclear what ***pwʷo-*** is (I suspect ***°pwo-*** 'look'), but it shows no evidence of MK *-z-* (Starostin's and Vovin's *-ñ-*). For **nā(s)-** < ***naˑso-*** 'advance; get better' Starostin ?1995 reconstructs a proto-Korean form we can respell as ***nañ(o)-*** which he puts into a proto-Altaic etymology ****ŋēne-*** 'to go (down, away)' based on Turkic ****ēn-*** 'go down', Tungusic ****ŋene-*** 'go, walk', and Japanese ****in-*** 'go, leave'; the semantics of the Korean stem make its inclusion in the etymology suspect, and the causative **naswu-** < ***naˑzwo-*** indicates a sibilant. The Japanese participant in Starostin's etymology is also doubtful and it is the only basis for his 'away' rather than 'down', while the semantic weight of the Korean stem is on 'forward' or (if anything) 'upward' in that 'better' is usually considered as "up" rather

than "down". The crisscrossings of Starostin's nasal correspondences are disconcerting, to say the least. He (Starostin 1991:48) justifies the palatal nasal for ***mozom*** by comparing it with various Tungusic words meaning 'heart' for which he reconstructs pTg ****miāwan*** / ****ñiāman*** (basing that on the Manchu ***nyaman***) < ****miāñam*** and from those two reconstructions he would set up pA ****miāñV-m***; he also adduces MK ***nyemthwong*** (1527) 'heart [the organ]' but the earlier version of that was ***lyemthwong*** (1489 Kup-kan 1:97a), which appears to be unrelated to the word ***mozom*** 'mind'. Cf Hamkyeng **phi-thong** 'heart' from the noun **phi** 'blood' + the bound noun **-thong** 'body (part)', also found in **mom-thong** '(trunk of) body', **āy-thong** 'bowels [in figurative uses]', **cok-thong** 'hoot; foot', and **mok-thong** 'throat'. The ***nyem*** part, however, might be borrowed from Jurchen ***nyema*** 'heart' (Kane 1989: 316). The pTg reconstruction looks contrived and the Tungusic words may have nothing to do with MK ***mozom***, for which (as we observed in §10.0) the phonograms found in 1400+ Kwan-yek indicate an earlier pronunciation ***mo-com***. The MK Hankul ***-z-*** is reflected in modern Ceycwu ***mosum*** (Hyen Phyenghyo 1961:169a) and (also South Cenla) **masum** (Wmk 1286a). 1103 Kyeylim #172 translates the word 'heart' by its Chinese character ***SIM***, providing it with the sound gloss ***SSIM***. In the hyangka all occurrences of 'heart' are written in semantograms; usually a send-off phonogram indicates a final ***---m***, which could be from ***mozom*** or ***sim***, or (19:10) from ***---(u)m***.

Vovin offers a fourth etymology, comparing ***azo/azG---*** (> **awu**) 'younger brother' with the Japanese kinterm ***ani*** 'older brother'. There are problems on both sides of the comparison. The Japanese word, phonetically written in 934 Wamyō-shō, must be considered together with ***ane*** 'older sister', which was phonetically written in 718 Ryō no shūge. These have dialect variants such as ***annya*** and ***annyo*** (older brother) and ***anne*** (older sister), and a comparison should take into account Korean **enni** 'older sister', which may be connected with **emeni** (dialect **emennim**, **emni**, **emi** < MK ***ʻema ¨nim***, ***ʻem-i***) 'mother' and **emma** 'mommie' ?< ***ʻem a*** 'mother!'. The Japanese words have shorter versions ***ni(i)*** and ***ne(e)***, and the ***a-*** may well be the OJ first-person pronoun ***[w]a*** seen in ***a se wo*** 'O my beloved brother / fellow!' (Kojiki 30, 105), there used to modify the morpheme found in OJ ***se-kwo*** 'beloved brother/husband/fellow' (Nihon-Shoki 108) and ***se-na*** 'beloved brother/husband' (Man'yō-shū 2522); the ***se*** was used by females to address a male sibling, whether older or younger, as ***imwo*** was used by males to address a female sibling. The Korean word **awu**

< *azo / azG···* < ***asok*** 'younger brother' shows up in dialects as **asi** and **asu** (Choy Hak.kun 1978:203), with voiceless sibilant (no nasal!). Dialect forms like **a(y)kki** may preserve the final velar of ***asok***. South Hamkyeng **asi** 'parents' (Choy Hak.kun 1978:210) reflects MK ***epe˙zi*** (1449 Kok 142) > **epei**; ***epe˙zi*** and ***epe˙si s*** (1475 Nay 3:50a) show both kinds of sibilants. Vovin's comparison does not account for the final **···k* of the Korean. If we knew as little about Japanese as we do about some of the Tungusic languages we would be tempted to say we had found the final **···k* for 'brother' when we come across the word *aniki*, but that word is unattested before the 1600s and the final syllable is thought to be a truncation of *kimi* 'prince' if not the Chinese loanword KWI 'precious' that is traditionally assigned to it. And how much further astray might we be led if we came across a Canadian Eskimo (Thibert 1958:76b) using the Inuktuk word *anik* 'brother of a woman'? Kang Henkyu 1988:253 compares ***azo / azG···*** < ****asok*** with Nivkh *ask* 'younger sibling', Mongolian *ači* 'grandchild' (in Khalkha also 'nephew'), and Turkish *az* 'small', a group to which we can add Sibe (Yamamoto 1969:116) *ajigə* 'little, small, very young', which is probably *aji-gə*, shortening of *aji-gən* 'tiny, wee', further expanded (pleonastically) to *ajigə-kən*, and corresponds to written Manchu (Norman 1967:12) *aji-ge* 'small, little', *aji-gan* 'young, small', *aji-da* 'small', and *aji* 'first-born'. The Nivkh kinterm is given as *atik* in Savel^{y}eva & Taksami 1965:72 and 1970:37a, and apparently it has the variant *aski*. Nivkh *aska* ··· means 'younger ··· ', *askad*^{y} 'be younger'.

Vovin claims that support for the palatal-nasal interpretation of the medial consonant of ***ko˙zay*** 'scissors' can be found in a few dialect versions that have the velar nasal (**kanga**, **kangay**, **kangey**, **kangu**, **kangwe**), but these appear to contain variants of the **-k^{e}/$_{a}$y** suffix found in the dialect versions **kkasik^{e}/$_{a}$y** > **kkakk^{e}/$_{a}$y** = **kasik^{e}/$_{a}$y**. There are, to be sure, problems in puzzling out the individual forms, as with other suffix-generated words such as the diminutives, but the notion of a palatal nasal hardly helps matters. See n. 52 for more on the word for 'scissors' < 'cutting tool'. Vovin also points to the nasal element in dialectal developments from MK ***yez^{u}/$_{o}$ / yezG···*** 'fox'. But it seems forced to try to explain the VELAR nasal in **yengwu**, **yengho**, **yenghi**, **yengngi**, **yengki** as coming from a palatal nasal, leaving unexplained the versions **yeswu**, **yesi**, **yeu**, **yei**, **yehi**, **yeho**, **yaswu**, and **yasi**, to say nothing of the several suffixed forms **yakkwangi**, **yakwayngi**, **yekkwayngi**, **yekkhwayngi**. As Ramsey has suggested to me, the nasal in **yengwu** (etc.) could nicely be explained as another instance of nasal

insertion before an affricate (Ramsey 1978:54-6, Martin 1992:48). This would assume *yez$^{\wedge}$o / yezG···* < **yec$^{\wedge}$ok* with the variant development **yenc$^{\wedge}$ok* > **yenk···* > **yengh**···. I am grateful to Mark Liberman for bringing to my attention the important 1983 paper by Ohala, which mentions not only his experiments that indicate a perceptual similarity between frication and nasality but also the otherwise unmotivated sporadic appearance of nasal vowels in Indo-Aryan languages that was investigated by Grierson 1922, of which I had been unaware. (See also Ohala 1984, 1993.) The example of *te˙ti-* 'throw' > **tenci-** is perhaps the best Korean case for the Ohala explanation, since the nasal is attested only once the affrication had set it. Ramsey offers the excellent example of the Chinese loanword ***panchywo*** 'banana plant' (1527 Cahoy 1:4b=8v) = **phanchwo** 'banana plant' < *PA-CYWOW*. The nasal insertion was sporadic, even more so than lenition.

It can safely be said that all modern reflexes of MK *z* are limited to s and zero. I know of no language in which a nasal has unconditionally become a sibilant. The development is not impossible, but it would require intermediate stages, such as Karlgren's Middle Chinese ńź on the way from a pre-MCh palatal [ñ] to the fricative ancestor of Sino-Japanese [ž] and Běijīng [r], and it would be difficult to get from a nasal to [s] without the intermediate stages of voiced sibilants [ž] > [z], equivalent to the articulation we assume for the MK phoneme, with a palatal allophone [ž] only before y and i. Moreover there would remain the difficulty of explaining the voicelessness of the modern intervocalic [s] reflexes of the MK sound. It should be mentioned that Martin 1953:17 treated the "naso-palatal fricative" as phonemically complex, an apical nasal + voiced aspiration (followed by a palatal semivowel in the rime), but "without revising Karlgren's phonetic interpretation of 'nasal-oral homorganic fricative'" and that accounts for such notations as "Middle Chinese *nhywok*", taken as the source of the MK borrowing ***zywoh*** 'mattress' (Martin 1992:45).

If the MK triangle symbol did not represent a sibilant, it would be difficult to explain why the particle found in the structure ···*^{e}/a ˙za* 'only if ··· ' appears as a voiceless sibilant when attached directly to the stem in *cwuk-˙sa* (1481 Samkang ^{1}yel:5a) 'only by dying' and *˙tu-˙sa* (1447 Sek 13:58a) 'only by entering' < *˙tu[l]-˙sa* < **˙tu˙lu- + ˙sa*. The basic form is *˙sa* and that turns up in the modern dialects (Martin 1992:88, 768b), though standard Korean has (i)ya < i(y)a < i[z]a, with the particle absorbing the nominative particle, as explained in Martin 1992:590b. In 1463 Pep 5:4b *HHOYNG ˙hwo˙m ila ˙sa* 'only if

it is [a matter of] being performed' translates a Chinese passage which carries the Hankul send-off annotation ··· ***ila za***. While the clear writing of ***ta˙zi*** for ***ta˙si*** 'again' in 1463 Pep 5:160a could be a scribal error (the triangle is the symbol for ***s*** with a bottom stroke added), it may attest a variant dialect in which the wave of lenition had claimed yet another victim. An obvious case of scribal error is in ***¨man˙zil ˙ey*** (1518 Sohak-cho 8:32a), which ought to be ***¨man.il ˙ey*** 'one in 10,000' = 'perhaps', but the scribe failed to round the initial circle. From the stem ***a(n)c-*** 'sit' we find that the form ***as.non*** (1447 Sek 19:6a) has the expected reduction of the final affricate to a sibilant, with which it had merged before 1445, while ***az˙nwo˙la*** (1462 [1]Nung 1:3b) has a ***z*** that is surely not to be taken as [ñ] nor as a direct reflex of the stem variant ***anc-***. The final sibilant in ***kus*** 'line' shows up voiced in the derived stem ***(kus) kuzG- / kuzu-*** 'draw a line [around ···], delimit' < ****kuzuG-*** < ****kusuk-*** which developed a secondary sense 'pull' that is now the primary meaning, and also in the derived stem ***kuz˙Gi-*** = ***ku˙zi-*** 'hide it', as well as in the adjectival noun ***kuzuk*** 'secluded, secret, private' and the substantive-derived noun ***ku˙zum*** 'limit'; see §6.3. Other evidence that the triangle did not represent a nasal: ***˙psu-ze(l)- / ˙psu-zel[u]-*** < ****psu[l]-selu-*** vt 'sweep up, clean it up' < ***˙psu-*** vt + ***¨se(l)- / se˙l[u]-*** < ****se˙lu-*** vt, as in ***˙psu-zel˙Gwo*** (1447 Sek 9:21a); ***˙han-¨zwum*** (1459 Wel se:23a) = ***˙han-[˙]˙zwum*** (1463 Pep 2:226a) = ***˙han-zwum*** (1475 Nay 2:2:13a) < ***˙han ¨swum*** (1447 Sek 19:14b) 'a deep breath'. In 1103 Kyeylim (#323) the expression ***nika cila*** 'want to go' is written ***˙NIK-KA-˙ZIP-LA***. If Sino-Korean "enter" (the third phonogram) was pronounced [ñip] how would we account for the desiderative auxiliary ***˚ci-***?

It is true, as Vovin observes, that Hwunmin cengum includes the ***z*** with the resonants that are "neither clear nor muddy", but notice the order: ***ng n m*** ZERO ***l z***. If ***z*** was sensed as nasal (and merely nasal) why was it not put earlier rather than at the end of the list? And why was it written with the graph for ***s*** (depicting a tooth) plus an extra stroke as the usual diacritic for "plus one feature different"? The Chinese list of 36 initials (which dates back at least to 1161) puts this initial at the end, perhaps because they too were puzzled by the sound, and the Hwunmin order may simply have carried that over. Vovin would find the earlier (? ca 890) list of initials by Shǒu Wēn [written GUARD WARM] more congenial, for that phonologist omitted #12 (the palatal nasal) and put #36 with the palatal stops (#9, #10, #11) according to Hashimoto 1979:463, who, however, expresses a general

distrust of Shŏu Wēn's understanding of the table. A better passage in Hwunmin cengum, for Vovin's purposes, is the later description that pairs sounds as "slow" vs "fast": ***ng*** vs ***k***, ***n*** vs ***t***, ***m*** vs ***p***, and ***z*** vs ***s***, following by ZERO vs ***q***. The very first presentation of the letters in Hwunmin cengum orders the consonants: ***k kh ng t th n p ph m c ch s q h*** ZERO ***l z***. There the ***z*** is not where we might expect it (after the ***s***) if it were felt to be the nasal member of the "tooth"-sound set. The odd last position suggests it may have been an afterthought. From what Ledyard and Ramsey have concluded, King Seycwong's system reflects 15th-century Korean research both into the history and into the then contemporary situation of the pronunciation of northern Chinese and of Sino-Korean. Seycwong ignored the palatal ***ñ*** of the rime tables, along with the whole group of palatal stops. The nasal associated with this group was the initial #12 represented by the character *niáng* 'maiden' (*NYANG*), and Seycwong did not create a letter for this initial. In fact this was the only case where he eliminated an entire group of initials. It should be emphasized that in the 15th century ***c*** and ***ch*** and ***cc*** were not palatal but merely affricate, and they are still not thoroughly palatalized for many speakers in the north and even in Seoul. The only palatal articulations for MK consonants would have been allophones of the apicals ***t(h)***, ***c(h)***, ***s***, and ***n*** when these phonemes preceded ***yV*** or ***i***. We must carefully distinguish the term "palatalized" as a description of coarticulation from "palatalized" as a designation of sound change that refers to the replacement of a non-palatal articulation (or phoneme) by a palatal counterpart. Thus ***ˑtye*** 'that' in the 15th century may have enjoyed a palatalized articulation [t^{y}ə] that was later affricated [ts^{y}ə] and palatalized, in the historical sense, to [tšə], the immediate ancestor of **ce** [tšɔ]. The articulation of the initial of ***¨nyey*** 'the old times' and ***ˑni*** 'tooth' may well have been [n^{y}] and that, I think, is as close to a palatal nasal [ñ] as the creator of Hankul ever got.

[4] For the modern fricatives (**s** and probably also **h**) there is evident a certain ambivalence as to whether they are truly like the unmarked (plain) stops and affricate or, instead, constitute a separate class of INTRINSICALLY VOICELESS consonants, the opposite category from the intrinsically voiced (the vowels, the nasals, and the liquid). That may help explain the peculiarities of vowel devoicing, which takes place after /s/ and /h/ despite the voicing heard for a following plain consonant: **phaki sicak hayss.ta** [ƥ^{x}ą̥gi šį̥d$_{y}$žak^{x}etta] 'began to dig'. The vowel unvoicing may be of fairly recent origin, for it seems to be less noticeable or even absent in the speech of certain parts of Korea.

5 This is an innovative and widely influential work, which Miller repeatedly dismisses as Unger's "still unpublished" dissertation, despite the fact that a paperback edition has been available for purchase since 1977, and a second edition appeared in 1993, with interesting new remarks in the preface. The pejorative adverb in Miller's locution is a coded way of saying "unpublishable", as becomes apparent from the disparaging remarks that accompany it. This work is, of course, in no way to be confused with the "still" unpublished Columbia University dissertation Miller 1953, a magisterial study eminently publishable – still. Those interested in unpublished dissertations may also want to take a look at that of Miller's disciple Itabashi Yoshizō (1987), who espouses many of the questionable tenets found in Miller 1987a, which got published, but in a volume not easily come by.

6 Attested examples: *¨ke˙lusi˙n i* (1447→1495 Sek 11:13b; 1459 Wel 2:37a, 21:204a) 'deigned walk' < **ke˙tu -sin ˙i* ← *¨keT-*, *¨si˙lusi˙n i* (1449 Kok 79) 'deigned load it' < **si˙tu -si˙n i* ← *¨siT-*; *¨kelu˙sya* ← *¨keT-* (1447 Sek 6:17a) 'deign walk', *¨kye˙lusya˙toy* ← *¨kyeT-* (1459 Wel 2:37b) 'deigned weave and', *¨mwu˙losya˙m ol* ← *¨mwuT-* (1482 Kum-sam 3:12b) 'that he deigns inquire', *¨mwu˙lusil ˙ss oy* ← *¨mwuT-* (1462 [1]Nung 5:33a, 5:48b) 'since he deigns inquire'.

7 The first sentence of the description just below the chart in Martin 1992:232 gives mistaken information. The passage will be rewritten for the next edition to conform with what is said here.

8 The form is now obsolete and it was uncommon in Middle Korean. It incorporates the particle *˙za* < *˙sa* 'only if' (?< *i˙s[y]-a* 'existing' or *˙i-˙s[y]-a* 'deigning to be'), as also found in *cwuk-˙sa ho˙l i ’lwo˙ta* (1482 Samkang [1]yek:5a) 'I must die'. This particle developed into modern **(i)ya** by the usual lenition leading to elision in Seoul: (*)*isa* (1776 Nyempul 38) > *˙i˙za* (1447 Sek 25b) > *ia* (*kapnon ke.s ia teksil ho˙m ye* 1677 Pak-cwung) > **iya**. In *˙tu-˙sa* the particle must have attached to the stem before the elision of the *l* (**˙tul-˙sa*) for otherwise we expect **˙tu-˙za* as, say, a contraction of *˙tule ˙za* (1482 Nam 1:62a, ?1517- [1]No 2:52a). According to LKM 1971:437 (which refers back to LKM 1963) the elision of *l* before *n*, *t*, and *s* happened between 1100 and 1400. In many examples the initial syllable of *˙i˙za* is better taken as the nominative particle (thus *˙i ˙za*) rather than the full dissyllabic form. Other examples of the *l*-elision (Martin 1997):

¨a-zop˙ti, *¨a-zop˙key*, *¨a-zop˙kwo*, *¨a-˙zopno˙n i*, *¨a-zop˙nwo˙la* ← *¨a(l)-/a˙l[o]-* < **a˙lo-* 'know'

*¨pi-ˈzopnwoˈn i, ¨pi-ˈzopkeˈnul ← ¨pi(l)-/piˈl[ʷ/o]- <*piˈlʷ/o-* 'beg; pray; borrow'
¨wu-ˈzopkeˈnul ← ¨wu(l)-/wuˈlu- 'cry'
¨two-zopˈkwo ← ¨two(l)-/twoˈlo- 'turn'

Compare:
¨sit-copˈkey ← ¨siT- 'load'
tut-¨copˈkey ← tuT- 'hear'
pat-¨copˈkey, pat-¨copˈti ← pat- 'get'

A nice example of the *l*-elision before *ch*: *ˈpa[l]ˈchoy* (1459 Wel 10:10a) ← *ˈpalˈch[y]oy ← ˈpal-ˈchi ˈoy* 'at the foot (of the bed)'.

9 The dialect divergence (and Stage 2) must predate 1103 Kyeylim, which (#320) has the phonograms *KUY-LIM* for *keˈlum < *keˈtu -m*. For a similar instance, see n. 11.

10 In Martin 1992:85 this is described as a prosodic displacement but no explanation is offered. It seems to happen with the *…(l)- / … ˈlʷ/o-* verbs (the high stems as well as the low) and with the always-rising stems such as *¨cyᵉ/ak-* and *¨eps-*; it also occurs with the leniting stems, in their compressed form (with the rise): *¨keˈlusiˈn i* (1459 Wel 2:37a, 21:204a) 'deigned walk'. But, interestingly, it fails to occur with the accentually anomalous *tuT-* 'hear' and *toT-* 'run': *tuluˈsil ˈss oy* (1449 Kok 138) 'because he deigns hear', *toloˈsilq ceˈk uy* (1459 Wel 17: 85b) 'when he deigns run'. This explanation means there should be no forms with the accent on BOTH syllables of *-ʷ/oˈsi-*. In exceptional examples the scribes were overly generous in supplying dots:

[¨]epˈsuˈsi.n i ʼˈla (1463 Pep 2:19b) = *¨epˈsusiˈn i ʼˈla* (1447 Sek 23:44a, 1459 Wel 17:80a)
¨epˈsuˈsya.m iˈGwo (1463 Pep 2:19b) = *¨epˈsusya.m iˈGwo* (1463 Pep 2:20a)
¨epˈsuˈsya.m iˈla (1463 Pep 2:20a) = *¨ep.suˈsya.m iˈla* (1463 Pep 1:206b)
¨epˈsuˈsya (1463 Pep 1:114a) = *¨ep.suˈsya* (1447 Sek 13:37a, 23:19a, 23:29b; 1449 Kok 110; 1459 Wel 8:44b, 8:88a, 13:40a, 14:54a; 1463 Pep 2:15a, 2:18a, 2:22a, 2:25b, 2:55a)
¨epˈsuˈsya.m iˈla (1463 Pep 2:20a) cf *¨ep.suˈsya.m iˈla* (1463 Pep 1:206b) – for **¨epˈsusyaˈm iˈla*
¨ep.suˈsyaˈm on (1459 Wel 13:61b) = *¨epˈsusyaˈm on* (1459 Wel 18:72b)
¨naˈzoˈsinoˈn i ʼˈla (1463 Pep 3:49a), cf *¨naˈzosiˈm ye* (1463 Pep 2:14b), *¨naˈzoˈsinoˈn i ʼˈla* (1463 Pep 3:49a)

ˑtu ˑlu ˑsya (1463 Pep 1:103b) – usually *ˑtu[ˑ]lu ˑsya* (1447 Sek 6:12b, ...), cf *ˑtu ˑlusya ˑtoy* (1447 Sek 23:15a)
¨he ˑlu ˑsya (1459 Wel 14:10b), cf *¨he ˑlusi ˑm ye* (1459 Wel 10:85a)
¨he ˑlu ˑsya.m i ˑGwo (1463 Pep 1:180b)
¨a ˑlo ˑsya.m i ˑGwo (1463 Pep 1:93a/b)
¨two ˑlosya ˑm i (1463 Pep 2:14-5)
¨nwo ˑlo ˑsita ˑka (?1517- Pak 1:71a)
¨tywo ˑho ˑsi-ngi ˑ ˑta ← *¨tywoh-* (1447 Sek 24:24b) = *¨tywoho ˑsi-ngi ˑ ˑta* ← *¨tywoh-* (1447 Sek 24:37a, 1447→1562 Sek 3:3a)
¨tywo ˑho ˑsya (1459 Wel 21:218a) = *¨tywoho ˑsya* (1447→1495 Sek 11:21a)
kams-¨two ˑlo ˑsya (1447 Sek 23:25b)
ka ˑpoyya ˑwo ˑsi ˑkwo (1463 Pep 2:91b)

These examples are aberrant, for they fail to show the displacement:

¨twolo ˑsya (1459 Wel 1:25b, 9:35c), cf *¨two ˑlosya ˑm i* (1463 Pep 2:14-5)
¨twolo ˑsino ˑn i (1459 Wel 1:26a), cf *¨two ˑlosi ˑm ye* (1459 Wel 2:58a)
¨twolosin (1463 Pep 2:19a)
¨nazosi ˑm ye (1463 Pep 2:14b)
¨kelu ˑsya (1447 Sek 6:17a), cf *¨ke ˑlusya ˑm i* (1459 Wel 2:37b, 1463 Pep 2:14b)
[¨]he[ˑ]lusya ˑtoy (1463 Pep 2:19a)

The following example puts an unwanted dot on the second syllable: *ni ˑlo ˑsi ˑn i* ← *nilG-/nilᴥ-* (1463 Pep 2:141b) = *nilo ˑsi ˑn i* (1447 Sek 23:11a; ... ; 1463 Pep 2:157a; ...).

Examples of *... ˑᴥ ˑsi-* sometimes represent *... ˑᴥ- ˑsi-*, with the honorific attached to a vowel-final stem (or stem alternant), as in *mwo ˑlo ˑsino ˑn i ˑ-ngi s ˑkwo* (1459 Wel 8:92b), *mwo ˑlo ˑsya* (1445 [1]Yong 19, 1459 Wel 21:210b), *mwo ˑlo ˑsyal* ← *mwo ˑlo-/¨mwoll-* (1463 Pep 1:37a), *mwo ˑlosya ˑtwo* ← *mwo ˑlo- / ¨mwoll-* (1449 Kok 78) ← *mwo ˑlo-/¨mwoll-* < **mwo ˑlol-* 'not know'.

[11] There are no Middle Korean attestations of the homonymous stem that must be the source of modern **kyĕT-** vi 'get greasy or oily, become experienced' (vi), vt 'oil (paper)'. Miller 1978:38 connects this stem with proto-Altaic **kar*$_2$ 'fat (especially on the belly)'. Poppe (1960:17, 87, 96) assumed a longer form **karbiŋ* and compared the K noun **kalpi** 'ribs' (< **kal ˑpi* not **kol ˑpi* because the Ceycwu word has */a/* not */o/*), perhaps thinking of the meat rather than the bone, but the Korean word is probably from **kal(-ok-/-i-)* 'split (vt/vi)' + *ˑpye* 'bone'. One

problem with Miller's comparison is that the Korean word has to do with oiliness, while the Altaic word has to do with belly bulk. And the Korean stem is probably from an earlier *¨*kiT-* with breaking of the vowel (LKM 1959) to yield *¨*kyeT-* > **kyēT-**, as seems obvious from *ki˙lum* 'oil' – 1103 Kyeylim (#191) "*ki˙lim*" [*KKUY*-EnteringTone-*LIM*], which must be the substantive of that stem.

12 LKM 1971 explains *ilkhoT-* as **ilh-* (from which *ilhwum* > *ilum* 'name') + *koT-* 'say', a stem that enjoys a full paradigm in Ceycwu (Hyen Phyenghyo 1961:118a, Pak Yonghwu 1988:101a), just as does *ilkhot-* (Pak Yonghwu 1988:101a). For Middle Korean, however, it is usually treated as a defective stem **[¨]ko(l)- / ko˙l[o]-*. This could be amended, however, to **[¨]kot- / ko˙l[o]-* < **ko˙to-*. The stem *[¨]koT-* (?< *¨*kaT-*) can be compared with J *kata(-)r-* 'tell'. It has also been compared with Mg *kele-* > *xele-* 'say' and *kele* > *xel* (Dagur *xeli*) 'tongue; language', Chuvash *kala-* 'speak'. On LKM's stem **ilh-* 'name' cf *nilG- / nil¼o-* < **nil¼oG-* < **nil¼ok-* vt 'say' and Mg *nere* 'name' (see also Starostin 1991:37).

13 Kim Tongso 1981:150-2 presents an array of Tungusic stems with meanings like 'achieve, complete, be able, win' coming from **ete-* 'cease' (Tsintsius 2:470a) for comparison; cf LKM 1958:108, #47. Perhaps the accent can be explained if we assume *¨et-* that was earlier **e˙te-*. The initial aspirate in Olchi, Orok, and Nanai *hete-* would seem to provide the etymon with eligibility for the proto-Altaic (proto-Nostratic?) *x of Miller 1987b, and to strengthen the case for including J *kat-* < pJ **kata-* L 'win' in the etymology even though it has a velar initial instead of the OJ "F-" or "s-" that Miller posits. Perhaps proto $*x_2$? But an equally good (or better) candidate is found in pJ **pata-sa-* > *fatas-* > *hatas-* 'accomplish, fulfill' and **pata-Ci-* > *fate[y]-* > *hate-* 'reach the end'. To these Japanese stems (and pJ **pata-ra-ka-* > OJ *fatarak-* > J *hatarak-* 'work') Starostin 1991:73 compares the modern K **pē(l)-** 'earn' and various Mg, Tk, and Tg stems from which he reconstructs pA **p'ārV* 'endeavor'.

14 A number of the *...(l)-* stems have likely cognates in proto-Tungusic **...lV-*, as in these examples from Kim Tongso 1981: *[¨]to(l)- / to˙l[o]-* < **to˙lo-* 'be sweet' : pTg **dalï-* : Tk **tāt-* 'taste; sweet', *[¨]ko(l)- / ko˙l[o]-* < **ko˙lo-* 'change it' : pTg **kala-* 'change it' (cf n. 46), *¨a(l)- / a˙l[o]-* < **a˙lo-* 'know' : pTg **ala-* 'make known; know'. We can perhaps add: *¨i(l)- / i˙l[¼o]-* < **i˙l¼o-* 'form, take shape; arise, happen' : pTg **il(i)-* 'stand up, stand', to which a better semantic fit is

found in ***¨ni(l)- / ni˙l[ᴴo]-*** < ****ni˙lᴴo-*** vi 'arise, get up'. For a couple of stems there is the possibility of a rather more extensive etymology: ***˙su(l)- / ˙su˙l[u]-*** < ****˙su˙lu-*** vi 'vanish', vt (= ***sul ˙Gwu-***) 'let/make it vanish, get rid of; digest', ***˙so(l)- / ˙so˙l[o]-*** < ****˙so˙lo-*** vt 'burn it; melt it, make it vanish' : pJ **sara-* 'depart', **sara-pa-* 'clean, dredge; snatch away, abduct', **sara-sa-* 'bleach, expose' : Ma *sala-* 'distribute' (Tsintsius 2:57b asks whether this is a loan from Chinese *sàn* 'scatter') : Mg *sal(a)-* 'get detached, part from', *sal-g(a)-* 'detach, separate; sever, discontinue, divide' : Tk (Clauson 1972:824-6) *sal-* 'throw; let go, ...' < 'move it, ... ', *sil-* 'rub it, wipe it (clean)', *silk-* 'shake it (off)', *silik/g* 'clean, pure, smooth'. There may be Tungusic cognates for ***¨wu(l)- / wu˙l[u]-*** < ****wu˙lu-*** vi 'cry; sound' and ***wulG- / wulu-*** < ****wuluG-*** < ****wuluk-*** vi 'howl, roar' in stems based on *ūlta* 'echo, sound' (Tsintsius 2:263a) – but notice also Ma *ura-* 'echo' (cf LKM 1958:118, #232), and there are promising comparisons in Mg *uyla-* 'cry, howl' and *uhila-* 'cry, howl', Tk *ulu-* 'howl', Yakut *uluy* and *ÿyÿlaa* 'howl', and perhaps J *oto* 'sound' (Martin 1966:242 #209) – cf Tg *ētər-* 'cry, weep'. There are, however, also cases of Tungusic ****...r-***: ***¨pi(l)- / pi˙l[ᴴo]-*** < ****pi˙lᴴo-*** vt 'beg; pray; borrow' : Ma *firu-* 'curse; implore, pray' < pTg **hiru(-ye)-* (Tsintsius 2:327-8; cf LKM 1958: 109, #59) : pre-Mongolian **pirügē-* (Poppe 1960:116, 127) < pA **pirü(-ge)-* 'pray, ask' (Street 1974:23); perhaps pJ **pwoka-* 'pray' and **posaka-* 'pray; speak; congratulate; curse' (Martin 1975:693) are related, but the forms leave much to be explained. The following comparisons pose questions but look good (cf Martin 1966:241 #194): ***˙pho(l)- / ˙pho˙l[o]-*** < ****˙pho˙lo-*** vt 'sell' and ***˙phu(l)- / ˙phu˙l[u]-*** < ****˙phu˙lu-*** vt 'untie; (dis)solve, clear' : Evenki *bū-* 'give; sell', *būr-gi-* 'return, repay' (? and *borī-* 'divide'). Ma/Jurchen *bu-* 'give' : J *(w)ur-* < **bura-* 'sell' (? and **bora-* 'bend, fold, break' and **bara-* 'split, break') : Mg *bari-* 'take; give, present; pay off, discharge (a debt)' : Tk *ver-* < **bé:r-* (Clauson 1972:354b) 'give; sell', Chuvash *par-* 'give', Yakut *bier-* 'give'. Tungusic **...d-* enters the scene in the comparison ***[¨]mu(l)- / mu˙l[u]-*** < ****mu˙lu-*** vt 'bite' : Tg *mudu-* 'bite, gnaw'.

[15] The stem ***[¨]tu(l)- / tu˙l[u]-*** < ****tu˙lu-*** 'hold; lift' has been compared with pJ **tɑra-* 'take; hold', with Tk *tut-* (Chuvash *tıt-* 'seize, hold'), and with Ainu and Nivkh verbs (Martin 1966:233, #106).

[16] There are examples of ***...n-n...*** for ***...t-n...*** as early as 1459, notably in the compound stem ***ton-˙ni-*** = ***tot-˙ni-*** 'run/go around' (the ancestor of modern **tani- / tayngki-** 'commute') but that did not become widespread until the 17th century, though there are a few examples of

---p-n--- > ***---mn---*** and ***---k-n---*** > ***---ngn---*** in the latter half of the 16th century. This was part of a general assimilation of stop to nasal and it happened to the regular stems ending in ***---t-*** (***patnon*** > ***pannon*** 'get') as well as those ending in ***---T-*** (***totnon*** > ***tonnon*** 'run').

17 The source of ***¨ma(l)- / ma˙l[o]-*** < ****ma˙lo-*** vt 'desist, restrain (oneself), refrain from' (as an auxiliary, ***V-˙t i ¨mal˙la*** 'don't V !') is perhaps to be found in Ma *mara-* 'decline, refuse'. Tsintsius 1:532a puts both of these with Tg *mari-* and written Mg *margi-* (Khalkha *marga-*) 'dispute, argue, call in question'. Cf Chuvash *mar V* 'not V' (Krueger 1961:224a), *V-ma-* 'not V' (142-3); Yakut *V-ma* 'don't V !' (Krueger 1962:143); Tk *V-ma* 'don't V !'. Cf LKM 1958:114 (#147) and Kim Tongso 1981:104. Kim's "MK ***mal-il coyng***" refers to one of the two glosses for the Chinese character ***coyng*** in 1576 [1]Yuhap 2:19b: ***mal[˙]Gil***, the prospective modifier (= imperfect adnominal) of ***mal-˙Gi-*** 'dissuade', one of the meanings of the character more familiar in the first [1]Yuhap gloss ***to[˙]thwol*** 'to struggle' (it writes the **cayng** of **cencayng** 'war'). Possible Japanese cognates can be found in the adjectival noun *mare* < **mara-Ci* 'rare' and the auxiliary adjective found in *V-ru mai* 'probably not; let's not! [negative hortative or tentative]' < *ma(si)zi-* < *masi-zi-*, though the formation of the latter is unclear. Cf Miller 1971:275-6; Martin 1975:942-3, 1987:819.

18 The non-Korean examples are mostly cited from Poppe 1960; he does not mention various Tungusic stems from the root **tū-* (including *tūt-*) 'step on, tread' (Tsintsius 2:202-3), perhaps because of the vowel and the meaning. The Tungusic root for 'run', **tute-*, may be a better match for K ****toto-***. And Tsintsius (1:147a) gives the Tungusic root for 'walk' as **gä:ri-*, but places the Lamut (Even) stem *gïrka-* (1:154b) = *g^{Y}erka-* 'step, walk' (Tsintsius and Rishes 1952:123b, 597a, 679b) under **giran-* 'step' together with Evenki *girku-* (Vasilevich 1958:89). If this Tungusic evidence can be adduced the Korean rescue may not be so critical, after all.

For a sobering assessment of the Macro-Altaic verb formant that Miller proposed, see Wenck 1981:338. Wenck's review is well worth reading for other criticisms and for the reminder (340): "Skepticism, which Miller -- prefers to call 'defeatism', is a scientific virtue."

19 Miller 1979:38 reconstructs proto-Altaic **ker$_2$ü-* 'roam, wander, travel', disregarding the hyphen in Poppe (1960:19, 104) and Street (1974:16) that accounts for the Mongolian front rounded vowel as a suffix. He still further confuses the matter by stating that "Ramsey's

reconstruction of these *t/l* stems as original dissyllabics ending in a labial vowel -- is exactly substantiated by the Altaic data, down to and including the quality of the vowel in question". Well, not exactly "exactly", for Miller (seeing in the text what he wants to see) fails to realize that the final vowel symbol in Ramsey's reconstruction ***ke˙lu-*** symbolizes a high unrounded vowel, either back [ï] or central [ɨ], and not a "labial" vowel, whether by that Miller means merely a rounded vowel such as [u] or specifically ("exactly", after all!) the front unrounded vowel [ü] of the written Mongolian stem. This sort of sloppiness does not lend much credibility to the exuberant contentions that accompany it.

20 To my knowledge, no one has paid any attention to Mongolian (Khalkha) *gar-* = (Monguor) *gari-* 'go away' or Manchu *garda-* 'run, hasten'. Where do these fit in? What about Lamut (Even) *g^{y}erka(-wāttāi)* 'walk' (Tsintsius and Rishes 1952:123b) and Evenki *g^{y}erku- / girku-* (Vasilevich 1958:85/89)? (See n. 18.) On the other hand, Tk *k/gel-* 'come, come back' (Clauson 715b) is compared by Starostin 1991:99 with written Mg *gel-deri-/-deji-* 'walk, go by foot' and pTg **gel(i)-* 'get ready for the road; seek' so as to reconstruct "pA **galE*" with which he compares pJ **kǫ-* 'come'.

21 Looking further afield, /t/ is found in Kamchadal **kətxa* 'foot' (Orbis 11:589), Koryak **qat/-lqat-* 'walk', and Chukchi *qätï* 'she went'. But /l/ turns up in Chukchi *tala* 'trample, kick' and Finnish *tallata* 'step, step on' (Bouda 1959:296), with meanings more removed from those of MK ***toT-*** 'run' or J *tat-* 'stand; leave'. Other Chukchi forms of interest to Korean: *mi* 'what', *mi-* 'wh-' (MK ***˙my-ech*** 'how much/many', ***mu-*** 'wh-')'; *kat-* 'hard' and *kɨrg* 'dry' (to be added to Martin 1966:233, #99). Chukchi *?ora* and *urä* 'long' could fit into the following etymology: MK ***wo˙la-*** adj 'be long(lasting)' : Mg Khalkha *urt* = Dagur *orete* 'long (time/space)' : Tk *ür* 'a long time' (Clauson 1972:193a) : Tg *ūr* 'not long ago, lately, recent'. Cf Kim Tongso 1981:160-1, Starostin 1991:34. But note Poppe 81, 100: Middle Mg *(h)urtu* < **purtu*, Monguor *fudur* < **furtu* < pMg **purtu* = Chuvash *vərəm* < **urun* < **purun* 'long' : OTk *uzun* 'long', Yakut *usun/uhun* 'long'. To these we can compare pJ **puru-* 'old (= not new/recent)', as in Murayama 1983:20. Notice also (Clauson 1972: 281): Tk "*uza:* 'be or become long or long drawn out (usually time, less often space)'", *usat-* < **uzat-* 'pull lengthwise'. To these we can compare pJ **pisa* 'longlasting'.

Kamchadal forms of interest to Japanese: *ma(s)* 'where', *ma-nke* 'to (from) where' (Ryūkyū *maa* 'where', *maa nkai* 'to where' – but see Martin 1975:50); *-q* adverb designator (J *-ku* – but see Martin 1987: 804-6, 1996b).

22 Two other Korean stems deserve consideration. The infinitive of the stem *tao-* ?< **ta[G]o-* 'get exhausted, run out' is *ta[o]-˙a* and that is the source of the adverb *¨ta* 'all, exhaustively'; the stem, like all strings of a vowel + *o* or *u*, probably contains an elided consonant, which can be tentatively identified as the (velar or laryngeal) voiced fricative /*G*/: **ta[G]o-*. We are tempted to derive the adverb *te* 'more' from the infinitive *te[u]-˙e* 'increasing it/them' (and I succumbed to that temptation in the first version of Martin 1997) but there is a problem: unlike *¨ta* the adverb *te* lacks the rising accent that results from a reduction of low pitch + high pitch. It seems likely, therefore, that *teu-* < **te[G]u-* vt 'increase it/them' is derived from the adverb, rather than the other way around, and I suspect that the stem is a reduction of *te °ho-/ ˙ho˙y-* 'increase; get or make it more so'. To be sure, there is also *¨ta °ho-/ ˙ho˙y-* and that is quite possibly the source for the stem *ta[G]o-*, which has much the same meaning. I treat *¨ta °ho-/˙ho˙y-* as a secondary formation, however, because of the accentual discrepancy with *te °ho-/ ˙ho˙y-*. If we do not do that, we are forced to explain the accent of the adverb *¨ta* as intrinsic, running counter to the operating assumption that there were no rising accents in proto-Korean (§8.0). A different source for *¨ta* would be a reduction of *ta[h]-˙a*, the infinitive of *tah-* 'arrive, reach, touch'. It is unclear whether the final *...h-* of that stem comes from *°ho-/ ˙ho˙y-* 'do/be' or is itself intrinsic, as is implied by comparing it to J *tuk-* L 'arrive, touch (on)' (Martin 1966:225, #5). And another explanation for *te* 'more' would be a truncated *te[˙wuk]* < *te˙wu k* (with an emphatic particle) from **te[u]-˙wu*, the unattested adverb of *teu-*.

23 But these stems may well contain *tar-u/tas-u* 'suffice/add' (on which see Miller's opinion below) < **ta-ra-/-sa-* to the first of which we might well compare also *˙co˙la-* vi 'grow up; become sufficient, adequate, ample' or *tao-* 'get exhausted' = 'be all there is, reach the end'; and, to the second, *teu-* 'increase it/them' (see n. 22).

24 See Street 1981:302-3, who goes so far as to say (299) that for proto-Altaic "it seems proper to construct only two liquid phonemes **r* and **l*, rather than four", dispensing with the trumpeted r_2 as well as l_2. But Miller 1989:111 tells us "The reconstruction of $*l_2$ $*r_2$ lies at the heart, not only of Altaic comparative phonology, but also of the

entire Altaic historical-linguistic hypothesis". Incidentally, despite its pretentious title, Miller 1989 mentions only two Middle Korean words and two Kokwulye forms; it is mostly devoted to a tar-and-feathering of Kiyose Gisaburō for his Jurchen studies. It also refers more than once to the well-known scholar To Swuhuy as "Tu Suhŭi". The correct McCune-Reischauer Romanization is "To Suhŭi", as indicated by his own preferred spelling of "Doh Sou Hie", which Miller punctiliously includes, though that is To's spelling only when writing in French (as in the summary of To Swuhuy 1977). When writing in English (as in the summary of To Swuhuy 1980) he spells his name "Toh Soo-hee", but he omitted the hyphen in autographing a copy of the book for me and he wrote "Soo-Hee" in a coauthored article in Language Research 16 (1980). (The character CAPITAL is read with /u/ only in Běijīng and in Sino-Japanese *tugoo* 'convenience' and *tudo* 'each time'.)

The same paper (Miller 1989:111 n.12) professes yet again faith in those two kinds of *l* in "the original Altaic language", and that faith is reaffirmed in Miller 1990:26 n.3, where he contends that the *s* which Korean is alleged once to have had for $*l_2$ was "mostly replaced" in Middle Korean and modern Korean "probably as a result of a stage of re-Altaicization of the Korean language midway in its history". What a "re-Altaicization" is must be left to the reader's imagination; it is even difficult to fathom what an "Altaicization" might be, to begin with! Now you see it, now you don't. Is this "the science of linguistics" so piously invoked in Miller's opinion pieces? And what are we to make of the emergent waves of Romanticization of English to be found in such etymological sets as "state", "estate", and "coup d'état"?

Miller 1990 declares that J *aziro* 'rough-woven mat of rush or bamboo; a kind of fish-weir' (in OJ only attested as the rebus *amyi-sirwo* 'net white') is cognate with a pTg **adulï* reconstructed with the meaning 'net' by Benzing 1955:972 (¶31), and ignores the internal etymology **a[si] m[u]sirǫ* proposed in Martin 1987:389 and the widely accepted hypothesis that the "z" is */ns/*. By what sound laws does pJ *-nsi-* correspond to Tungusic *-du-*? Surely there are no other putative cognates to support the argument for such a correspondence. Virtually all cases of pJ *-nC-* have a morpheme boundary between the nasal and the consonant, and the traditional etymology of *am[i]-sirǫ* 'netting stuff' would fill the bill nicely were it not for a discrepancy of accent register between *aziro* (High) and *ami* (Low) < pJ **am[a-C]i*, the infinitive of the verb *am-* < pJ **ama-* L 'weave'. To his highly suspect etymology Miller would add MK ***a˙zol(q)*** 'to grab', treating the "net"

as a capturing device for the hunters as well as a seining device for the fisherfolk. The Korean word is the prospective modifier (imperfect adnominal) of the verb *ˇaz- = ˇas-/aˇz[o]- < *aˇso-*. The voiced ···z··· which caught Miller's eye was an ephemeral lenition of 15th-century Korean. The final *-l(q)* is a separate morpheme, in no way connected with the *l* in the Tungusic word. If there is a Japanese cognate it is not the final *ro* of OJ *aziro* but the *-ru* ending of the attributive (adnominal) form of the verb.

25 Another piece of evidence for the lenition of *t* to *l* is offered by Chen So.yong 1990:150, who observes that Samkwuk saki used the phonogram writing of *KWU-TI* for two placenames equated with the semantogram 'metal', and Chen thinks that this form, which he would derive from **kwut-i* 'hard thing', became MK *kwuˇli* 'copper'. (For more on this, see To Swuhuy 1977:109-14.) But if so, that would call in question the attractive etymology linking *kwuˇli* with OJ *ki* ?= **kiy* < **kui* ?= **ku[r]i* 'yellow, red-yellow' (Whitman 1990:525).

The final ···*t* of *hwe s ˇwut* (1527 Cahoy 2:11v=23r 'boot bottom') is probably an error for ···*l*; cf *hwe s wul* (1690 Yek.e 1:46a 'the "fan" of a boot'). The word *ˇwulh* means 'shoe rim; fence' (= modern **wulthali**), and the *hwe* is a nativized borrowing from Chinese *HWA* (Běijīng *xuē* 'boots') – rather than from *HHWAY* (Běijīng *xié* 'shoes'). We resist the temptation to derive *kwutwu* from *kwut-* + *ˇwu[l]* i.e. 'hard-rim[med] shoes', for it was not attested before the Japanese took over Korea: the word must be a modern borrowing from nearby Japan. Traditional Korean shoes are called *ˇsin* (cf *ˇsin-/siˇn[ɥo]- < siˇnɥo-* 'wear as footgear'): *hwe ˇ[G]wa sin ˇkwa* '[high] boots and [low] shoes' (1463 [1]Nung 6:96b). Miller was mistaken in ruling out **kwutwu** as a Japanese loan just because of the modern standard Japanese pronunciation of /tu/ as [tsɨ]. The affrication of /tu/ and /ti/ in the central area of Japan is relatively late (after 1500) and unaffricated versions of these syllables are still heard in dialects of northern Kyūshū and elsewhere. (The word *kutu* gets clipped to just *kut* in Kagoshima and some of the Ryūkyū dialects.) It is quite possible that the Korean rendering of the word came from hearing speakers of such dialects, or that it was simply a reading pronunciation, as presumed by Vovin 1994:244, who goes into the matter in detail and dates the loan at some period between 1896 and 1931 (the two editions of Gale's dictionary), presumably arriving, as Vovin suggests, on the feet of Japanese soldiers, who were guilty or innocent of affrication depending on their home towns. Murayama 1963 came to the same conclusion.

[26] The resemblance to Old Irish *tëe* < Indo-European **tepent-s* 'warm' (cited from Arlotto 1972:78) is striking but presumably accidental.

[27] That would give **pōyw-** the original constituents ***°pwo-˙i-°pwo-**. But the lack of a Middle Korean attestation of ***¨pwoyW-** may indicate that the stem is a late creation.

[28] And Yakut *nuur* 'doze, slumber' (Krueger 1961:253a) ?= *nuhanıy* (Afanas^{y}ev & Kharitonov 1968:147b), written Mg *noyir* = Khalkha and Dagur *noire* 'sleep' (Kuribayashi 1989:300). The Yakut word may be a borrowing, for proto-Turkic is said to disallow initial *n-* except for *ne:* 'what' and its derivatives (Clauson 1972:774).

[29] Cf Martin 1966:233 (#102 HEAP), Starostin 1991:70 (pA **tām-* 'gather, pack').

[30] There are no Japanese cognates for K ***ne˙mu-*** (/ ***na˙mo-***) but good cognates can be found in the other languages (cf Poppe 1960:38, 104): Mg Khalkha *nem(e)-* 'add, increase', Ma *neme-* 'add, increase' (Tsintsius 1:622a says Evenki *neme-* is borrowed from Mg) : OTk *yemä-* 'add, increase' and (Gabain) *ymä/yimä* 'yet, also, moreover'. Probably related: Tg *neme-* 'cover', Mg *nemü-r-* 'cover, wear' (Poppe 1960:37-8, 68).

[31] This will perhaps compromise the comparison of pK ***pukum-*** with pJ **p^{u}op^{u}oma-* 'hold in the mouth; comprise; (buds) proliferate' = pJ **pukuma-* 'hold in mouth; bear (in mind); comprise, contain; imply'.

[32] The MK stems ***˙com-*** and ***˙tom-*** have likely cognates in the Altaic languages, including doublets: Tk *çom-/çöm-* 'sink; dive', Yakut *timir-* 'sink, drown' (borrowed into Evenki according to Tsintsius 2:182); Mg *šime-* 'soak in, be saturated', *šime* 'juice'; Tg *simi(-t)-*, Ma *sime-* 'soak', *simen* 'juice' (cf LKM 1958:117, #194). (Tsintsius 2:394 puts the Mg forms also under Tg *čīməl-* 'soak, ooze' with Nanai *čime-* 'ooze, get drenched' ≠ *sime-* 'swallow, suck'.) Also J *sim-* < pJ **sima-* 'get soaked', *simi[y]-* < *simey-* < pJ **sima-Ci-* 'permeate, soak', *simer-* < **simeyr-* < pJ **sima-Ci-ra-* 'get damp', *simes-* < OJ **simeys-* < pJ **sima-Ci-sa-* 'dampen/wet it'. Unclear: how J *som-* < OJ **sǫma-* = *sǫmar-* < pJ **sǫma-ra-* 'get dyed' and *some-* < OJ *sǫmey-* < pJ **sǫma-Ci-* 'dye it' fit in, nor how to account for the Korean vowel (***tyom-***?). The morphological structure of K **tamku-** < MK ***tomk- / tomo-*** < ***tomoG-*** < ***tomo-k-*** 'soak it', and of ***comk- / como-*** < ***comoG-*** < ***comok-*** vi 'get soaked' / vt 'soak it', is parallel to that of Mg *šin-ge-* 'soak into' or (Kalmyk) 'absorb' (Poppe 1960:116). Notice also the MK stems ***˙su˙muy-*** 'soak / sink in, infiltrate' (and also ***˙suy-*** = ***˙soy-***

'leak'?), *som˙ski-* = *soms˙ki-* 'swallow (up)', and *somoch-* 'pierce, penetrate'. Cf Miller 1987b:43.

33 We reconstruct pK **pisi-* 'exist' on the basis of its negative counterpart *¨eps-* < **¨e-pisi-* ?< **a˙[n]i pisi-* (cf §2.3), though we have no explanation of the disappearance of the initial **p*, and the internal reconstruction of the *¨e---* as **a˙ni* is cast into doubt by the external comparison with pTg **e-* 'not' and **e-si-* 'not be' (again the mysterious disappearance of the labial in the stem 'be'), as first mentioned by Ramstedt 1924, who equated it with the Mongolian auxiliary *a-* 'be' despite the opposite meaning. (Poppe 1977:222 says the negative verb **e-* 'not to be' is an important feature common to all Uralic and Altaic languages.) On J **a-ra-* 'be' and a Korean morpheme that may be cognate see Martin 1992:70 and 1995:8. The stem **pisi-* is convincingly compared with pTg **bisi-*; see Kim Tongso 1981:53-4 and the references there. The irregular Manchu adnominal *bisi-re* 'to be' corresponds to MK *isi-l(q)*; Vasilevich 1958:56b has an Evenki participial form *bisī*. The *s* also appears in the Manchu and Nanai imperative *bi-su* (Sunik 1962:336) but there it seems to be part of the ending (cf Menges 1968:220); Ikegami 1957 offers both *bisu* (88) and *buu* (89) for the imperative of *bi-* 'be'. Other forms to be considered: written Mg *bui / büi*, OJ *wi[y]-* < pJ **b^{u}/o-Ci-* (Martin 1987:698) with the adnominal forms *wi[y]-ru* 'to be/stay' < pJ **b^{u}/o-Ci-r*.

34 Miller 1971:121 and 1990:11a, where K *¨il*, said to mean "work, business", is deemed to be cognate with "Turkic, Uighur *ys*, *is*, and Turkmen *is*" [correct the "*s*" in these words to *ş* = *š* and supply vowel length for at least the Turkmen]. That ignores the fact that the basic meaning of the Korean noun *¨il* is the less specific 'event, happening' – equivalent to J *koto* (cf *si-goto* 'work' < **sǫ-Ci n kǫtǫ*), and like *koto* found also in expressions meaning 'has the experience of its happening' > 'sometimes, ever; never'. The Miller comparison was first made by Polivanov 1927 (cf Aalto 1979:932), and it appeared (in Murayama's Japanese translation) in Polivanov 1976:179. Note 13 of the Polivanov paper offers a more attractive basis for the comparison: the Turkish nominalizer that is described, with the base *-(y)ış*, in Swift 1963:86-7. Polivanov suggests that this deverbal suffix might be a grammaticalization of the noun *iş* 'work; affair', for which he gives the Turkmen and northern Uzbek *i:ş* with a long vowel that is taken as etymological by Sevortyan 1974:395-6, who gives the length also for the presumed Yakut cognate *i:s* 'handiwork, sewing'. We might ask whether the derivation could have arisen the other way around (as in

Korean), with the Turkic noun coming from a direct nominalization of a lost verb stem meaning 'arise, happen'; in any event the vowel length in the Korean noun (and verb) seems to be a secondary development, however we account for the Turkic length. The unexplained labial glide that is initial in Mongolian *üile* and Manchu *weile* 'work; affair; crime' (Jurchen *weile be* 'the affair [accusative]') is perhaps relevant – and points us away from the Korean connection. But Polivanov may have been right in the direction of his comparison of the Turkic etymon with Korean, while not casting his net so far to the east as to capture the Japanese fish market. In his 1990 paper Miller once more treats J *izar-* 'to catch fish at sea' – misleading, for the meaning seems to be 'seek seafood [fish or shellfish] along the shore' – as having a voiced sibilant, tossing that into the creel as more evidence for "an original Altaic noun $*il_2$, a form that in the original language meant 'work, occupation'". (I guess scavenging IS work. At least, when it is original.) But he backtracks and says the Japanese "verb formed from an earlier original noun -- was at first **isa-r-*" but got voiced under the influence of the Japanese reflex *-r-* for Altaic $-l_2-$, which he tells us was a "verb-suffix that meant 'to do or perform the act or action of the underlying noun'". (Well, well.) The only reason to assume that the clearly attested OJ stem *izar-* < **insa-ra-* ever had the **-s-* seems to be a desire to associate it with the stem *asar-* 'scavenge, forage, hunt, fish for'. Martin 1987:699 erred in citing the entry for the verb as "isaru", misled by scribal traditions that often neglect to indicate the nasal-voicing phenomenon (called nigori or dakuon) without thereby intending to deny its presence. The later assumption of a voiceless *-s-* is due to the compounds cited as *isari-bi* 'fishing fires' and *isari-bune* 'fishing boat'. But the former was *izari*-FIRE (with a semantogram for *fyi*) in Old Japanese, and according to Nkd it has the modern versions *izari-hi* and *izari-bi*. The noun *isari-bune* was first attested in 1187 when Fujiwara Shunzei wrote the second element semantically (so that it may have been *-fune*, not *-bune*) and wrote the first in kana which may or more likely may not have bothered with the nicety of noting the nasal-voicing distinction. The *-s-* is clearly attested only by the Japanese-Portuguese dictionary of 1603-4 ("*isari* 'night fishing with torches', *isari-bi* 'night-fishing torches'") – our most accurate source for this kind of information, but from a time when the words may no longer have been particularly colloquial. The 1081 dictionary Myōgishō attests neither these nouns nor the verb. All in all the internal etymology in Martin 1987:677 probably points in the right direction, though it could be amended to something like: < **i[swo] n [a]sa-ra-*

'scavenge on the beach' or < **i[wo] n [a]sa-ra-* 'scavenge for fish'. The *n* marker was usually genitive-nominative or dative-locative, but sometimes it marked objects, as in *kusagir-* 'weed' < **kusa n kira-* 'cut weeds' and *kokorozas-* 'aspire' < **kokoro n sasa-* 'point the heart' (Martin 1987:669). Whether pK **a'so-* 'grab' makes a suitable cognate for pJ *asa-r(a)-* 'scavenge' is up for grabs; by mentioning the word in the 1987 entry I may be to blame for Miller's reaching for it.

35 I assume that the lenitions from **p* are by way of *Gw* < *W*. The *Gw* notation was a way of writing a transitional stage of the bilabial fricative on its way to *w*. The postnominal particle *'kwa* 'with, and' (Martin 1992:662-3) has the alternants *'Gwa* after *l*, *y*, or *i* – as in *a'pi 'Gwa atol 'Gwa* (1475 Nay 1:20b) 'the father and the son', and *'[G]wa* = /'wa/ after other vowels – as in *pwuthye '[G]wa "cywung 'kwa 'lol* 'Buddha and the priests' (1447 Sek 6:16b). The word is a compression of *kol 'Wa*, the infinitive of *"kolW-/kol'p[o]-* < **kol'po-* 'line it/them up, compare' (Martin 1992:511b). This secondary case marker (in the spoken language now largely replaced by the gerund **hako** < *ho'kwo* < *°ho-/'ho'y-* 'do/be') was attached to the free form of the two-shape nouns (Martin 1992:238-9), unlike the primary case markers (nominative, accusative, dative, genitive), which attached to the compressed form. For that reason, it never followed the MK noun coda /zG/: *yezo / "yezG* ··· + *'kwa* → *yezo '[G]wa* 'with/and the fox' (1463 Pep 2:110a) < **yeso kol'pa* ?< **yoso kol'pa*. No noun ended in a simple ···*z* in basic form except for *"koz* 'brink, edge, limit', an aberrant development that is explained in §8.0 (8) and n. 51.

36 In a wordy and diffuse article, apparently intended to be a review of Martin 1992, Miller 1994a professes puzzlement at the way I cite the title of the 1103 work Kyeylim ¹yusa by the Korean readings of the characters, saying "it is of course a Chinese source, and its title should be cited as such", namely as Messrs Wade and Giles would write it: "Chi-lin lei-shih", which (especially shorn of tones) is surely farther from the pronunciation of the Sòng author Sūn Mù than are the Korean readings. I am puzzled at Miller's puzzlement. The work is of interest primarily to Koreanists and the name is regularly given in the Korean version, as shown by Werner Sasse's dissertation which Miller (1994a: 21 n.8) more or less correctly cites by its title as "Das Glossar Koryŏ-pangŏm [sic; correct to -pangŏn] im Kyerim-yusa" with nary a sign of Giles nor Wade. If I were now to amend my citation, I would make it "Kyeylim ¹yusa (Jīlín lèishì)". The Kyeylim to which we Koreanists refer is only a small section of the book, specifically the glossary of

some 355 Korean words called Kolye pangen (Gāolí fāngyán), as seen in the title of Sasse's dissertation. Miller, whose readings of Korean scholarship rely heavily on Japanese and German translations, failed to consult important works by several scholars on this text, such as Pang Conghyen 1955, Ko Pyengik 1958, and LKM 1968, among others to be found in the bibliography of Sasse 1976:148-9. A later work, Kang Sinhang 1980, adds information not available in Sasse and is somewhat easier to use. I refer to the glossary entries by Kang's numbers, which vary slightly from Sasse's. And yes, I HAVE examined the original Chinese text, which of course does not number its entries. Incidentally, when the title is pronounced **/keylimnyusa/** the **n** does not reflect the originally liquid initial of the penultimate morpheme but rather it is an example of the popular reinforcement of initial **y**··· and **i**··· (from any source) by the nasal insertion described in Martin 1992:110-1, and that pronunciation can be explicitly written if we Romanize the title as Kyeylimq ˡyusa.

Miller correctly, though for the wrong reasons, takes issue with the adjective in the subtitle of my book ("A complete guide to the grammar and history of the Korean language"), for that epithet was a bit of hyperbole inserted by the publisher despite my protest that no work is ever "complete". Miller deplores the failure of my presentation of the history of Korean to take into fuller account the sketchy body of information dredged up from "Old Korean" rather than confine my study for the most part to the secure data of Middle Korean. To that criticism the most eloquent answer is found in Ramsey 1991:216 n.1: "In their phonological and morphological detail, the Korean alphabetic materials of the fifteenth and sixteenth centuries are equal to, if not superior to, any other pre-modern body of works in the world. The records of the Korean language that predate the invention of the alphabet, on the other hand, are poor and scanty. Chinese characters were occasionally employed as phonograms to transcribe native words and grammatical elements. Few of these pre-alphabetic transcriptions survive, and those that do are fragmentary, difficult to interpret, and in the best of cases little more than hints as to what words might have sounded like before Middle Korean. What is called Old Korean consists of a few linguistic forms reconstructed from such pre-alphabetic transcriptions."

I fail to find in Martin 1992:49 the alleged statement (Miller 1995: 79) that "the final *-h* of Late Middle Korean *cah* 'foot (rule)' is a lenition of final *-k*" but perhaps he is reading my mind, for the word

in question probably gets its ***-h*** from the velar member of the set of final obstruents lenited in the unattested northern Chinese dialect that was responsible for the Sino-Korean ***-L(Q)*** ultimately from MCh ***-t*** under Maspero's theory. (See Martin 1996c for more on that theory.) The eleven ***-h*** words listed in n. 39 can be explained in this way.

With respect to the Korean negative adverb, Miller 1994a:19 takes the phonogram string ***QAN-"LI*** in two Kyeylim examples as "the earlier cognate of later ***anti***" but he does not say how the change took place or how the MK ***a ˙ni*** and the modern **ani** came to be (or what he means by "cognate"), nor what it is that makes him say these two attestations of 1103 represent an "earlier" form than the attestations that have been interpreted as ***anti*** (hyangka 2:3, ***anti 'n*** 19:4). These suffer, to be sure, from encipherment with the semantogram NOT + a phonogram ***˙YU*** that is traditionally also assigned an arbitrary and made-in-Korea reading of the syllable ***/ti/*** in ***a ˙ni 'n ˙t i*** (> **ani 'n ci**). The usual way of making a negation in the [1]itwu formulas of [1]Yi dynasty bureaucrats was to write NOT-***˙YU*** and pronounce it ***a ˙ni 'n ˙t i*** '[it is the case] that it is not', for which the uncertain rationale, to use the collocation of one my favorite hermeneuts, "need not detain us". Exception must be taken, however, to the Miller 1995:81 misquotation that somehow has me alluding to "phonogram writings" of the negative words. The passage in question (Martin 1992:815) says simply "the phonograms" (as interpreted by Kim Wancin) and clearly refers to those phonograms writing the noninitial syllables of the words ***anti***, ***antin***, and ***antol***, in which the first syllable is clearly the semantogram NOT but there is no consensus on the second syllable.

A truncated version of Miller 1994a will be found in Miller 1995, with the addition of a few more strange mistakes, including "*Tongkuk chŏnkun*" for *Tongguk chŏng'un*, an important work he dismisses unseen, as well as "*Hyang'ka*" (for which the McCune-Reischauer Romanization favored by Miller would have "*Hyangga*"), and even "*Hankŭl*" for "*Han'gŭl*". Miller 1995:82 n.13 charitably presumes that the date of "1448" given for **Tongkwuk cengwun** on p. 95 of my book is a typographical error for "1447" (as given on p. 4), but the matter is explained on p. 406: while the compilation of the character dictionary was completed in September 1447, it was not published till 1448. Cf LCT 1964:812, Hankwuk.e tose haycey 144b. (Wmk 1:1101 gives only the 1448 date. I now routinely use the earlier one.)

Before generously edifying us with more of his eristic sermons on the Korean language, Miller would do well to familiarize himself with

the language of the early Hankul texts. That would prevent such gaffes as (Miller 1978:20-1) comparing the gloss ***ˑkhul*** found in 1528 Cahoy (3:11a=25b) for both ***ZIN*** 'human-heartedness' (also often translated 'benevolence') and ***"INGJUY*** 'righteousness; loyalty' with a Kokwulye word ****kVl*** (Miller's versions would have *s* or *š* instead of *l*, and *ü* or *ö* for the vowel) 'heart, mind' with which he associates J *kokoro* and various Altaic words (Miller 1979:357-8). The word ***ˑkhul*** is simply the imperfect adnominal form of the adjective ***ˑkhu-*** 'great, large' and the gloss was chosen to evoke the largesse shared by the two abstract concepts as well as the importance of both as Confucian virtues. The elaborate fantasy (358) of the "collapse of a pre-MK ****kokul*** > MK ***ˊk'ŭl***" shows the extent to which pseudo-data can be used to shore up a poor argument. A better knowledge of Middle Korean would also have saved Miller from mistakenly assuming that Choy Seycin, the compiler of Hwunmong Cahoy, had in his vocabulary the word ***na*** for 'sun'; in the cited passage ***ˑna' ˑzil*** (1527 Cahoy 1:1a) the omission of the final liquid of ***ˑnal*** 'day' (and not 'sun'!) is just the surface result of a morphophonemic rule that suppresses ***l*** before an apical (***t***, ***n***, ***l***, ***s***, ***z***, ***c***), and the ***ˑzil*** represents the reading of the Chinese character ***ˑZILQ*** (which DOES happen to mean both 'sun' and 'day'). Miller's "Old Silla ***naš***" is based on his pronouncement that the phonogram CORPSE can never represent ***l*** despite evidence that in Korea it was, in fact, so used, both in the hyangka and later. The fanciful notion that the imperfect modifier ending ***-l*** somehow comes from "Old Silla" ***š*** which in turn comes from proto-Altaic $*l_2$ is due to an unwillingness to envision the possibility of an orthographic tradition taking hold that uses a phonogram to represent something other than (or in addition to) its traditional Chinese value. It is not unusual for orthographies to develop implausible and even contradictory uses of the same symbol. Witness the rules underlying Shaw's famous respelling of the English word "fish" as "ghoti": "gh" as in cough, "o" as in women, "ti" as in nation. The English letter "j" is pronounced /y/ in "fjord", /h/ in "jalapeño", /h/ or zero in "San Jose", and /dž/ in "jelly". Faced with the circular path of $*l$ to *š* to *l* again, Miller concocts the ad hoc conceit that a "re-Altaicization" (see n. 24) caused the Koreans to stop hushing and start lallating.

37 Vovin mentions a hearsay report of [bem] as a Nanai dialect word for 'tiger' but the form is unconfirmed in the literature on Tungusic. He offers the word as external evidence (whether borrowed or genetic) that the 1445 MK compound ***tay-¨Wem*** 'mighty tiger' shows that the

source of *¨pem* 'tiger' by itself had an initial voiced stop. But even if the Nanai form is corroborated it could represent a borrowing from a Korean initial like modern /p/ with conditioned allophones that include [b]; or, conversely, a Korean borrowing with *p* as [p] for the Nanai [b]. After all, modern Koreans write the English "bus" as **pesu** and pronounce it **ppesu**. The accent of MK *¨pem* 'tiger' calls for an earlier **pe˙Cem* or **pe˙mV* (§8.0). That, of course, says nothing about the quality of the initial consonant, but it casts doubt on comparing it with the Nanai word, either as a loan or as a cognate. A superficially more congenial comparison could be made with the source of the English "puma" meaning 'cougar', from a Kechua word borrowed through Spanish, which has the right syllable structure. It is doubtful that either tigers or cougars could swim the Pacific, but those intrigued with long-range comparisons might enjoy the diversion of a look at Kechua and Aymara, related languages which resemble Korean in grammatical structure. According to Menges 1984:240, K. Bouda has written on "Tungusisch und Kechua" in "ZDMG", *loc. non cit.* but the reference is apparently to Bouda 1960 and 1961a. Perhaps a Nostratic tiger can swim the Pacific, after all. In a rather similar vein, Kurt Schildmann presented a short paper at the 30th International Congress of Human Sciences in Asia and North Africa (Mexico City 1976) ambitiously entitled "Proto-Japanese and proto-Uto-Aztecan affinity". I have the feeling that *¨pem* really "ought" to be some Chinese word but no qualified candidate has turned up. One peculiarity in the 1103 Kyeylim notation for the word (#90) is the use of the character *(˙)KAM* 'inspect, control' as a sound gloss, but annotated with the dimidiated (fǎnqiè) spelling *PPWO-NAM*, which can be taken as a reasonable approximation to the modern pronunciation of **pēm** and shows a voiceless consonant. (The 12th-century northern Chinese version of the initial represented by the Tongkwuk prescription *PP* was an aspirated voiceless stop as in the Běijīng version *pú* 'a kind of rush'.) The same odd sound gloss occurs also for *¨pam* 'chestnut' (#69) where it is assigned a dimidiated version that is taken as *PPWO-¨HAM*. (The first character is a correction substituted in the 1927 collated text by Zhāng Zōngxiáng, Běijīng *pù* 'shop', and the second character, *jiàn* 'cage', while also phonetic, may evoke the image of a chestnut because of its "tree / wood" radical.) The difference in the vowel quality between these two words apparently escaped attention. The Japanese word for 'chestnut' *kuri* < **kuru-Ci* L compares nicely with K **kalay** < ***kaloy*** (1773-1837 Mulmyeng-ko 4:3a) ?< ****koloy*** ?= ****kolo-i*** 'walnut'. But notice also K **kwul** ··· 'oak' in **kwul pām** 'acorn', **kwul phi** 'oak bark; Platycarya', and **kwul**

cham-namu 'the oriental oak'; **kāl** 'overcup oak', **kasi** < *ka˙soy* 'white oak (acorn)'. The Japanese word for 'walnut' is *kurumi* LLL ?< **kuru-miy* < **kuru mu-Ci* 'chestnut fruit', the likeliest of the etymologies cited in Martin 1987:587. Miller 1975:167 compares the Japanese etymon with Turkish *koz* and Khakassic *xurux* < **qur$_2$uk* 'walnut'. Also to be kept in mind: Jurchen *hušu* 'walnut' and Mg *xušga* 'walnut', which seem to have escaped the attention of Menges 1984 in his nut-cracking expedition around the Nostratic continent.

38 I feel a certain responsibility for the STONE etymology, having brought the Japanese word into the picture in Martin 1966 (#224), little realizing it might prove part of the shale with which a latterday Sisyphus would choose to burden himself. That etymology has proved popular (e.g. Starostin 1991:71 and 92), perhaps because it admirably fills the requirement proposed by Martin 1966:189: "If some of the correspondences are so complex that they can be explained only by a series of historical changes in each of the languages, the possibility of RECENT borrowing is excluded." I felt uneasy about the etymology from the beginning, however, because the correspondences entailed two presumptions otherwise unsupported: (1) that Japanese word-initial *i-* is really *yi* in the three nouns *isi* 'stone' (for which Udmurt *iz* 'stone' is a near soundalike), *ita* 'board', and *ifye* 'house' and the one verb *ir-u* 'enters' (cf Tg *ī-* 'enter' and written Mg *ire-* 'come, arrive') but not in *ima* 'now' or *if-u* 'says' or most other instances; and (2) that in lexical comparisons the imputed initial *y* belongs with the initials of the syllables *ya*, *yu*, and *yo* (encompassing both *yǫ* and *ywo*). Moreover the Japanese words *iso* < *iswo* HH 'beach; rock; sand' and *isago* < *isagwo* HHH 'sand' (both high atonic) appear to be entangled with the same etymon, though I have suggested **isa n kwo* 'little grindings' as a possible source of the word for 'sand'. Vovin's internal reconstruction of *isi* as **(d)isǫ-Ci* (1994:242) is interesting; it runs counter to the vowel of *iswo* but perhaps he has an explanation of that. One thought: *iswo* could be a compression of *is[ag]wo* – but, of course, only to cries of dismay from Miller, who (1988:416, 1994b: 234) judges that the internal etymologies which, in his Cratylus dialog, Plato put into the mouth of Socrates show that deletions and insertions cannot explain word histories. 'Tain't so. (If 'twere, could historical linguists have figured out that the English word "eleemosynary" goes back to the same Latin source as "alms"?)

The notion (Martin 1987:63) that OJ *kiyri* 'fog' might be contracted from a phrase, "perhaps *ku[mwo] ari* or *ku[m]ori*" would likely have

been better received if I had omitted the cautiously offered suggestions. Maybe that omission would have deterred Miller (1988 and 1994b) from repeatedly ridiculing the idea. Had he bothered to finish reading the book under review he would have discovered that the later specific treatment of the etymon for 'fog' (451, 709) made no mention of a compressive origin but simply reconstructed the pJ **kuCiri* with the implied further derivation of **kuCir[a-C]i* on the assumption that the noun is derived from the verb. I am attracted, however, by Thorpe's suggestion (cited on 709) that the verb stem *kiyr-* 'fog up' itself contains a noun *kiy* (< **kuCi*), surviving as such only in the Ryūkyū dialect of Miyako. But I would replace the second element in his derivation (*ir-* 'enter') with the common formant **-ra-*. The verb most commonly appeared with the additional formant **-pa-* as *kiyraf-* < **kuCi(-)ra-pa-*. The Korean word for 'fog' is ***¨an ˙kay*** ?< ***a ˙ni ¨kay-*** 'not clear'. Mongolian *kiraγu(n)* 'hoarfrost' (Kuribayashi 1968:271), Turkish *kırağı* 'frost, dew', Yakut *küden/küderik* 'fog', and Hungarian *köd* 'fog' are surely unconnected with the Japanese word.

39 But the northern Chinese spoken by the 12th-century author of Kyeylim may have lost some of the final-stop distinctions of the "entering tone". Among other pieces of evidence, in item #308 ***(˙)pa*** ?< * ***˙pah*** 'rope' is written ***˙PHAK*** but ***nwoh*** 'string' is written ***(˙)NA***. There are other examples of phonograms read ***---A*** that correspond to MK ***/wo/***. For 'string' we should keep in mind pJ **napa* 'rope' and **napa-* 'weave into rope', which might offer an explanation for the Korean rounded vowel. The ***---h*** is unexplained. The dialect versions **nong(-i)** reflect the sporadic development ***---h*** > **---ng** described in Martin 1992:713b, where similar evidence for ***(˙)pa*** < ?* ***˙pah*** is given. For more on these words, see Martin 1996b n.20.

On the other hand, in #354 ***ki ˙phon*** 'deep' is written ***˙KKUP-HUN***. It is unclear whether the coda of the first character in #348 ***˙HUK-KON*** for ***˙khun*** 'big' is to be ignored or not. The aspirate in the stem ***˙khu-*** may represent an earlier version of the intensive prefix ***s(ᵘ/o)-***. Lee Ki-Moon (LKM 1991:18, cf Ramsey 1993:440) has taken the Kyeylim evidence to indicate that the pronunciation of the stem was ****huku-***; similarly he has taken the writing (#99) of ***˙HWALQ-THA*** for ***˙tha*** 'ride' to indicate ****hoto-*** for the stem ***˙tho-*** 'ride', thereby casting doubt on the reconstruction ****to˙ho-*** that is suggested by his comparison (LKM 1958:118, #217) with Tg *tege-* 'sit; arise (from lying down)' (Tsintsius 2:226-8). The coda of the phonograms in #285 ***˙SYWULQ*** for 'spoon' and #286 ***˙CYELQ*** for 'chopsticks' seem to be present in modern **swul**

and **cel**, but I have suggested that these are contractions of **swut-kal(ak)**, which I would prefer to spell **swuq-kal(ak)**, and **ceq-kal(ak)**. The character for #285 has been "corrected" (presumably by Kang Sinhang) from *˙SWU* (Tongkwuk 6:34a), Middle Chinese **šyu*, to the graphically similar *SYWUN* / *˙SYWULQ* (Tongkwuk 3:7b/8a), Middle Chinese **sywet*, apparently because that is what occurs in #385 TEA-*˙SYWULQ* = ***cha*** + ***˙swul*** 'teaspoon' (unattested as a MK compound). It would seem just as appropriate to make the correction the other way. Yet in Middle Korean we find both ***˙swul*** and ***˙swu-˙cye*** (which may represent ***˙swu[l]-˙cye***) despite only ***˙cye*** (?< *˝TTYE*) and not * ***˙cyel***. In 1400+ Kwan-yek (#288) 'spoon' is written *˙SWOK-˙ZI* = modern Chinese *sù-ər* and (#289) 'chopsticks' is written, as it is in Kyeylim, *˙CYELQ* = modern Chinese *zhé*. No etymology has been suggested for ***˙swu(l)*** 'spoon'. Chinese words for 'spoon' include *˙SO* (Tongkwuk 5:3b), MCh **siy* < OCh **syed*; *SSI* (Tongkwuk 5:13b), MCh **džye* < OCh **dhyeg*, which also means 'key'; and *˙CYAK* (Tongkwuk 1:38b), MCh **džak* < OCh **dhyok*, which is graphically somewhat similar to *˙SYWULQ*.

Kim Tongso 1982:287 lists six other nouns attested with ***…h*** that are probably borrowed from Chinese nouns that ended in **…k* in Middle Chinese and five that ended in **…g* in Old Chinese. Those ending in **…k*: ***˙cah*** 'foot (measure)', ***chwoh*** (***chwo.h oy*** 1792 Muwen 1:21) = ***chwo*** (***chwo ˙ay*** 1466 Kup 1:19b) 'vinegar', ***cwoh*** 'millet', ***sywoh*** 'layman', ***tyeh*** 'fife', ***zywoh*** 'mattress'. Those ending in **…g*: ***kwoh*** (***kwo.h oy*** 1792 Muwen 1:56) = ***˙kwo*** (***˙kwo ˙ay*** 1518 Sohak-cho 8:20a) 'storeroom', ? ***nwoh*** 'oar' (but the ***h*** is unattested; 1481 Twusi 10:45a ***nwo˙h i˙la*** is 'string'), ***pwoh*** 'cloth for covering or wrapping', ***swoh*** 'swamp, bog', ***˙swuh*** 'woods, thicket'. For the likely explanation of the ***…h*** in all eleven of these words see n. 36.

40 The Zusho-ryō text of the 11th-century Myōgi-shō gives a reading *tuti* LL to the character for STONE (as well as the reading *isi* HL). This looks to be *tuti* LL 'earth, dirt' (?< pJ **tutu-Ci*, Martin 1987: 557) but, despite the accentual difference, it might be the same word as *tuti* LH (< pJ **tutu-Ci*) 'hammer, mallet', assuming that is a separate etymon. In any event the phonetic shape invites comparison with the Korean word for 'stone'. Cf Ishii 1986:161.

41 The full passage reads as follows: ***˙kwu.lwum so˙zi ˙yey s kulye˙ki lol ¨wulGwe˙le ¨pwo˙n i ˙tolthwo*** [= ***˙tolh ˙two***] ***˙stwo [HOYNG-˙LYELQ] ˙i is˙twota*** 'Looking up at the wild geese amongst the clouds, what do I see but a line of fowls as well!'. Another construal might be: 'and a

full line of them!', referring to the geese, or possibly to "my brethren" whose scattering is compared to that of the wild geese according to the explanatory note that accompanies the Chinese text of the poem. That interpretation would be a usage of *ˇtolh* as a kind of pronoun of ostensible reference "they" or "those"; cf *pehun ˇtolh* 'those that have cut themselves' (1466 Kup 1:82a). Or, instead of taking *¨pwoˇn i* as 'upon looking' we could take the *ˇi* as 'the one(s) who' and translate 'They who looked up at the wild geese are getting in line [to fly away], too'. The trouble with that is that the modifier *¨pwon* is modulated, as indicated by the accent (the unmodulated modifier is undotted *pwon*), and the modulator is not found when the epitheme ('the ones who') has been extruded from the subject of the embedded predicate ('looked up at'); see Martin 1992:271-2.

42 Perhaps a metathesis of **kwo-ni* to **ni-kwo* with subsequent partial assimilation of the first vowel to the second, but I suspect that only the *kwo* is cognate, at best.

43 Ki-Moon Lee [¹Yi Kimun] 1994 proposed the first explanation, *maˇlos hom* > *¨malssom*, but he explains the *ss* as the result of juxtaposing *s* and *h*. The other two hypotheses, more speculative, occurred to me when told of his etymology, which he based on a string of two graphs, one semantic ("word") the other phonetic (*s*). He did not say just where he found this string attested. The only occurrence of *¨malssom* in the hyangka seems to be 26:4, where a semantogram is assigned the reading by Kim Wancin 1980. Whether my further analysis is accepted or not, the derivation of *¨mal* itself from **¨mal[s]* < **maˇl[o]s* will certainly explain the rising tone in the word.

44 It is important that the canonical shape stipulated is *... ˇC¼o-* (the hyphen is crucial), where the susceptible consonant begins the last syllable of the stem, so that there is no need to account for the voiceless sibilant in *keˇsu(l)- / keˇsuˇl[u]-* < **keˇsuˇlu-* 'oppose, defy' or that found in *taˇso(l)- / taˇsol[o]-* < **taˇsolo-* 'get ruled, governed, controlled'. Both stems probably come from compounds, though the original components are unclear. The verb stem *keˇsu(l)- / keˇsuˇl[u]-* < **keˇsuˇlu-* 'oppose, defy' is probably related to the adjective stem *¨keˇchu(l)- / ¨keˇchul[u]-* < **¨keˇchuˇlu-* 'be unruly, wild' (note the cluster with *h*). The stem *?peˇsu-* vi 'swarm', for which the lone example is *peˇsunwon* (1481 Twusi 15:36a) used as an explanation of Chinese *PWUN-PWUN* 'all jumbled', may possibly be related to *peˇsus* 'mushroom' (?< *peˇsu-s* 'things that grow a-jumble'). In any event,

from the single example we cannot be sure that this odd-shaped stem was not, rather, *?pe˙su(l)-/pe˙su˙l[u]- < *pe˙su˙lu-*. The *-sp-* cluster does not lenite to **-zW-* in *kwus˙pu(l)-* 'fall down/flat' because that is a metathesis-generated variant of *kwu˙psu(l)-*, which comes from a compound of *kwup-* 'bend (= get bent)' + *˙su(l)-* 'vanish'. Another compound stem, *¨ke˙to(l)-* (LCT 1964:38b)< *¨ke(l)- / ke˙l[u]- < ke˙lu-* 'hang it' + *˙to(l)-/˙to˙l[o]- < to˙lo-* 'hang it' occurs only once (*¨ke-˙ton* ?1517- Pak 1:27a) and does not call for lenition of the */t/*.

[45] Another example of R < LH is found in the stem *¨kel˙ski-* a contracted version of *ke˙li˙ski-* 'get impeded, hesitate'. That stem could well form an etymological doublet with *ke˙li˙chi-* vt 'rescue, save' = *ke˙li-* 'take out of water; rescue, save', which is probably derived from *¨ke(l)-/ke˙l[u]- < *ke˙lu-* 'hang it', though that is not what is responsible for the initial rise in *¨kel˙ski-*. Another stem that is temptingly resemblant, *ko˙li-˙ski-* vt/vi 'block, impede, obscure; get hindered/obscured', derived from *ko˙li-* vt 'hinder or obscure it', may complicate the proposed derivation from **ke˙lu-* 'hang it'.

[46] Kim Tongso 1981:45 compares this stem with pTg **kala-* 'change it' (> Ma *hala-*) and Mg *xala-*. To those we can add the pair pJ **kara-* H 'borrow' (Martin 1966:228 #41) and **kasa-* H 'lend', if these were not formed on the Chinese loanmorph *ka* 'temporary'. Starostin 1991: 75 reconstructs pA **kala-* 'change' from these words and written Mg *hala-*; disregard his MK ghost 'borrow' on 139 n.149.

[47] And then, as the slogan goes, it's Miller time!

[48] But I suspect that *poy* 'pear' is from **po[l]i* and borrowed from the northern Chinese ancestor of Běijīng *báilí* (= *˙PPOYK-LI*) 'white pear'. (The word was borrowed into Cantonese as *bēléi*.) The borrowing into Korean must have been fairly early, before 1103 Kyeylim attests 'pear' (#74) as *˙PAY* and (less transparently) 'wild pear' (#75) as *˙MWON ¨CO ˙PHWU*. The all-low dissyllable *pwoli* 'barley' is probably also a loan, perhaps from a dialect version of Mg *buudai* < *ba(g)udai* 'wheat', in turn borrowed from Tk *buğday* 'wheat' (cf Ishii 1986:174). Phonetically closer: Chuvash *păli* 'wheat', Manchu *bele* '(hulled) rice' (cf LKM 1958:106, #8). The noun *swon* 'guest' – 1103 Kyeylim (#326, #327) *SWON* – is probably a loanword from Turkic or Mongolian. Ramstedt 1949:241 cites a "Middle Tk" form *sun* (with the vowel questioned) 'friendly', and that must be the word Clauson 1972:832b gives as *so:n* 'good-natured, kind-hearted'. The Khalkha Mongolian word *zoči(n)* 'guest' is said by Poppe 1958:200 to be derived from a word ("*con*" =) *jon* meaning 'people', the ancestor of Buryat *zon* 'people' and Oirot

dyon = (Turkic) Yakut *dyon* 'people' [transcribed from Afanas^{y}ev & Kharitonov 1968:265a], and Chuvash *şĭn(-sem)* 'people', *śĭn* 'person' (Andreev & Petrov 1971:327b, 377a, 857a). Cf Tsintsius 1:665 under Tg *ŋönmin* 'people'.

49 ^{l}Yu ^{l}Yel 1990:160-1, while noting the Kyeylim (#300) phonogram *'HHWALQ*, would reconstruct an earlier doublet ***pala/pele***, associating it with a verb 'spread, stretch' on the basis of the use of the verb for the noun in very early ^{l}itwu (no source cited). He says the Jurchen word for 'bow' is *bere*, but that should be amended to *beri* (Kane 1989:251). ^{l}Yu's derivation would be ***pala** > **hala** > **hal[a]** > **hwal***, much like (later) ***han soy** > **hwan soy** >* **hwāng-say** 'stork' and *'han 'sywo* > **hwang-so** 'bull'. Another possibility: *HHWO* 'wooden bow' (+ *'PELQ* 'release an arrow', or the northern Chinese suffix *-r*?).

50 This etymology poses a challenge to the external etymology that compares pTg ***pingi*** 'rain' (Kim Tongso 1981:21); Starostin 1991:34 further compares various Turkic words and comes up with pA ***p'iägi***. Although 1400+ Kwan-yek (#8) gives the phonogram *'PILQ*, that does not indicate a final liquid, since the contemporary northern Chinese pronunciation would not have preserved the final consonant. 1103 Kyeylim (#7) wrote *PHI-[MI]*, which (assuming dentilabialization of the initial of the second syllable) was pronounced something like [pivi], for which the closest MK string would be *piWi*, but the initial of the second syllable of a dimidiated spelling was usually irrelevant so that the word was probably pronounced [pii], which might well represent ***pi[C]i***. My etymology is not incompatible with the reconstruction by Starostin 1991:69 of pA ***borV*** 'foul weather' on the basis of Tk ***bora-*** 'to storm, bluster', written Mg ***boru-γan*** 'foul weather, rain', pTg ***bürV(-ga)*** 'snowstorm' (assuming the second part of K **nwūn-pola** 'snowstorm' is borrowed), and pJ ***pura-*** (see p. 47).

51 Miller 1994a:15 in a passage marred by an uncorrected misprint or two shows a surprising unfamiliarity with what we know about the lost MK vowel *o* (the underdot found in Hankul spellings before 1933) and its history. While there need be no harm in following Karlgren's adoption of the missionary convention of transcribing this phoneme as "*ă*" it is a mistake to follow him in calling this a "short *a*". I do not mean to suggest that Miller is one of Karlgren's disciples, or what he calls "[Karlgren and] his epigones" in almost the only passage (Miller 1994c:71, echoing 1975:194 n.2) of the doyen's oeuvre in which that curious ecclesiastical pejorative is preceded by something other than the fixed epithet "Chomsky and his". The missionary transcription of

the now obsolete vowel was based on the fact that, with a few lexical exceptions, modern Seoul merged the MK phoneme with the vowel **a** in word-initial syllables, while typically merging it with the vowel **u** [ɨ] in other syllables. But there is and was nothing particularly SHORT about the vowel, as is shown by the very form Miller cites, the stem "MK *pălp-*", which we can write in a more adequate transcription as *¨polp-* 'tread on'. As the double dot shows, this syllable had the long rising tone of Middle Korean that, with the gradual erosion of the pitch distinctions, led to the modern LONG vowel found in **pālp-**. The long accentuation appears in the form **pālp-ci** < *¨polp-ˑti* (1459 Wel 21: 112a, 21:119a; 1462 [1]Nung 6:96a; 1482 Kum-sam 1:15b). The noun **kā** < *¨koz* or *¨kos* (< **koˑso* < **koˑco*) 'brink, edge, limit' has nothing particularly short about its vowel, either. This word may be the stem of the verb *¨koz-* = **¨kos-/koˑz[o]-* < **koˑso-* < **koˑco-* 'cut' used as a noun ("cut-off place"). The noun affords examples of the low rise we hypothesize for the unattested compressed form of the verb stem: *ˑkil[h] s ¨koˑz ay* (1447 Sek 24:7b) 'at the side of the road', *paˑlol s ¨koˑz ay* 'at the seaside' (1447 Sek 6:43b, 24:12b, 20a), *ˑmul s ¨ko.z oy* (1481 Twusi 15:52b) 'at the water's edge', *¨kos naˑlaˑh i* (1447 Sek 24:11b) 'a border land', *eˑnu ¨kos ˑkwo* (1481 Twusi 24:51a) '[beyond] what boundary is it?', and different forms of the expression *¨kos ¨ep.s-* 'is boundless' (1447 Sek 19:4a, 19:24a, 19:42b, 19:42a), including *kuˑci ¨ep.suˑm ye ¨kos ¨epˑsu.l i ʾˑla* (1447 Sek 23:4b) 'it is endless and unbounded'. The "minimality" of the vowels *u* and *o* has to do with their quality, not their quantity. What is often transcribed as *ŭ* = *u* [ɨ] is not the "short" counterpart of *wu* [u] but its unrounded counterpart, and what is transcribed as *ă* = *o* [ɔ] is the functionally unrounded (phonetically LESS rounded and more open) counterpart of *wo* [o]. Miller is palpably misguided in his derivation of *¨polp-* (or *¨polW-* as I usually cite the stem) 'tread' from the Korean word for 'foot', ignoring the warning in Martin 1966:245 (which offers a different and external etymology): "If it were not for the vowel in the Middle Korean form we might worry lest **palp-** turn out to be a derivation within Korean from **pal** (MK *ˑpal*)". More than the vowel quality is involved: there is also the accentual discrepancy. Perhaps Miller would do well here to indulge his usual disdain for internal etymologies in favor of those of external origin, since for him "history" means "comparative history" and "etymology" means "comparative etymology". If Miller really wants to know why I follow the well established view that the sound of the lost vowel was something like [ɔ], he might enjoy a visit to beautiful Ceycwu, where

the thrifty island folk have held on to the Middle Korean phoneme and resisted the mergers made elsewhere. In various other places MK *o* turns up as **wo** or **wu** in specifiable environments or, unpredictably but often widely, in aberrant lexical reflexes. It also emerges as Seoul **e**, now pronounced [ɔ], in a few words, such as **peli-** < ***po˙li-*** 'discard', for which the expected form **pali-** is heard in other dialects, and **ilkheT-** < ***ilkhoT-*** 'say', for which the expected form **ilkhaT-** is heard in other dialects.

52 The ***...z...*** in several Middle Korean words probably came from ****...c...***, including ***mozom*** > **maum** 'mind; heart', ***kye˙zulh / kye˙zul*** > **kyewul** 'winter', and ***kozolh / kozol*** > **kaul** 'autumn'. The second syllables of these words were written with affricate-initial phonograms in 1400+ Kwan-yek. The noun **apeci** 'father' is probably to be connected with **epei** 'parents' < ***epe˙zi*** from ***a˙p[i]*** 'father' + ***e˙zi*** 'mother; parents', which survives as **esi** in a few dialects (Choy Hak.kun 1978:210). The scenario in these nouns was probably [ts] > [s] > [z], and that happened in only a few words. Moreover ***koz˙Gay*** 'scissors' (1481 Twusi 10:33b) is written in 1103 Kyeylim (#293) with phonograms corresponding to ***˙KALQ-¨CO-˙KAY***. The noun was created by attaching the suffix ***-˙kay*** 'implement' to the uncompressed shape ***ko˙zo-*** (or ****ko˙co-***) of the verb stem ***¨koz-*** = ****¨kos- / ko˙z[o]-*** < ****ko˙so-*** < ****ko˙co-*** 'cut' (cf §5.1 and n. 51) and then eliding the second vowel of ****ko˙z[o]-˙kay*** with subsequent lenition of the initial velar of the suffix. This ignores the coda of the first phonogram but we have no other evidence for a liquid, nor are we certain that the northern Chinese liquid representing Middle Chinese *-t* was still maintained in the speech of the 12th-century author (see n. 39). (There is a Běijīng word *gēzi* 'cutting tool' that corresponds to the first two characters but that seems to be a coincidence.) The pK ****c*** is based on identifying the etymon in the noun/adverb ***ko˙cang*** 'end, extremity; extremely, most', and the particle + bound noun ***s ko˙ci*** > **kkaci** 'till, all the way to', an adverbial particle. But it may be called in question by external comparisons with Tk/Uzbek *kes-* = OTk *käs-* 'cut', Chuvash *kas-* 'cut' (Andreev and Petrov 1971:671a) and perhaps *kěske* 'short' (197) and *kěsket* 'curtail' (814a = Tk *kıs-*) – cf K ***kask-*** 'cut; shave (one's head)' and ***kesk-*** 'break/cut it off', Nanai *kesi-* 'cut off'; Mg Khalkha *xeseg* 'part, fragment' and *xeseg-le-* vi 'to divide into parts' (also perhaps *hasa-* 'curtail, cut'), Dagur *xesehe* 'one part' but *xereke-* 'cut off' and *kereci-* 'cut' = written Mg *kerči-* < pA **kerti-* 'cut up, notch' (Poppe 1960:83, 87, 104, 135) = **ker-ti-* (19) > Mg Khalkha *kirt-* (51),

<) Tg *gïr-*, Mg *kirga-* (Khalkha *xyarga-*), OTk *kırk-* (all 'cut') : pJ **kira-* 'cut' (**kara-* 'mow', ? **kɒra-* 'hew') and **kaka-* 'scratch' : K ***k^{w}olk-*** vt 'scratch' and ***ˈkoli-*** vt 'whack, cut'. With respect to the etymon for 'scissors' Vovin called my attention to Manchu *hasaha / hashan* which led me to the Tungusic forms in Tsintsius 1:362 under Evenki *kayik*, including Jurchen *hajiha*. Tsintsius also cites the written Mongolian *xajicin*, Khalkha *xaycin* (Dagur *kaici*), and Buryat *xayša*. Nanai and other southern Tungusic languages have *xaja* (Tsintsius 1:458a).

[53] External comparisons offer little support for a cluster:

puth- 'stick to, adhere; rely on; from' : ? Tg *bute-* 'cover', Mg *butee-* 'cover', Kalmyk *büt(ü)-* 'cover' ? : J *huta* < OJ *futa* < pJ **puta* 'lid', J *hutag- / husag-* < OJ *futag- / fusag-* < pJ **puta-na-ka-* 'stop up, obstruct'. It is unclear whether this is related to pA/Mg **büri-* 'cover, enclose', Yakut *bür-* 'wrap up' (Poppe 1960:111, 135). From a different semantic perspective, Tg *bodo-* 'follow, go behind'.

pwuch- 'to fan', ***¨pwuˈchoy*** < ****pwuˈchi-ˈGoy*** = **pwuchi-kay** 'a fan' (cf LKM 1968:111): Kim Tongso 1981 has **püsö-* for both pK and pTg, the latter presumably based on Ma *fushe-* and *fushe-ku* (Norman 1976) or Ma *debsi-* (Sibe *defeseme-*) 'to fan', *defseke* < *debsiku* 'a fan'; cf Mg *devuur-* 'to fan'

kiph- adj 'be deep': J *kiwa* < OJ *kyifa* < pJ **kipa* 'brink; extreme', J *kewasi-* < OJ *kefasi-* < **kyifasi-* < pJ **kipa-si-* 'steep, precipitous' (Martin 1966:230 #61); Mg *gün* (Dagur *guen*) 'deep'

kaph- vt 'repay', ***ˈkaps*** 'price' : pJ **kap-* 'buy' (Martin 1966:227 #36), **kapa-Ci-* 'exchange' : Tg *ga-* 'take; buy'. For Evenki *bū-* 'give; sell' and *būr-gi-* 'return, repay' see n. 14.

mich- vi 'attain, reach' : pJ **mita-* 'get full', **mita-sa-* = **mita-Ci-* 'fill' (Martin 1966:232 #90); pA **büte-* 'be completed' (Street 1974:10): Tk *büt-* 'become complete'; Mg Khalkha *büte-* (Dagur *bute-*) 'be achieved, get completed', *büten* < *bütün* 'whole, entire, full' borrowed into Evenki *butun*. But Starostin 1991:111 compares the J stem with pTg **milte-* 'full' (Tsintsius 1:536-7 under Lamut *miltəre*) and written Mg *meltei* 'overfill' to reconstruct pA **milt'V-*.

nwoph- adj 'be high or lofty' : J *nobor-* < OJ *nɒfɒr-* < pJ **nɒpɒ-ra-* 'climb'

Lacking external comparisons: ***math-*** vt 'smell/sniff it', ***nath-*** vi 'appear', ***path-***$_1$ vt 'sift, drain; (liquid) dry up', ***kith-*** vi 'remain'; ***kuch-*** vt 'cut off, sever; end it', ***cwoch-*** vt 'follow, chase', ***somoch-*** vt 'pierce'.

But perhaps indicating ***...Ch-*** < ****...Ck-***:

path-$_2$ vt 'spit out', Ceycwu ***pakku-*** : J *hak-* < OJ *fak-* < pJ **paka-* L 'spit (out)'

teph- vt 'cover with; cover', ***twuph-*** vt 'cover'; ***tep ˙key***, ***twup ˙key*** 'a cover' : Evenki *tepke* 'a case, covers' = *tepku* (Vasilevich 1958: 423a), *tepke-* 'encase, cover' (Tsintsius 2:237; cf Kim Tongso 35-6, who reconstructs just **täp* for pTg) and Lamut (Even) *tepkū-* 'conceal in a bag' (Tsintsius & Rishes 1952:501a) : Mg *tavsag* 'chest with cover and padlock' : OJ *tabafu* < pJ **tanpa(-)pa-* 'cover'. LKM 1958:107 #30 compares Ma *dobto-ku* 'cover' and *dobton* 'book wrapper', raising a question about the voicing of the initial in the Tungusic etyma. Cf Tk *yap-*, Middle Mg *dabci* (Clauson 1972:870-1) 'cover'.

54 There may have been Koreans who said ***ka ˙zom*** without its ever entering the literary mainstream; the word is spelled with the voiced sibilant in two examples from 1553 Uncwung: ***kazo.m oy*** (7), ***kazo.m ul*** (19). And the etymon is perhaps found in the adjective stem ***ka ˙zomye(l)- / ka ˙zomyel[u]-*** < ****ka ˙zomyelu-*** 'be rich', as implied by the morphological juncture in spellings of 1586 Sohak: ***ka ˙zom- ˙ye ˙na*** and ***ka ˙zom-ye ˙lum ˙ulwo ˙pse*** (both 2:20b). The form ***¨ep ˙suzi.n i ’ ˙la*** (1463 Pep 4:89b), however, is probably just a miswriting of the honorific ***...usi...***, and the Uncwung spellings of 'breast' with *z* could be taken as similar scribal mistakes.

55 Is ***ta ˙si*** 'again' (= ***ta ˙zi***, p. 70) the adverb of a lost verb? Cf (LKM 1958:107 #27, #28) Ma *dasa-* 'revise, repair, correct; govern, rule' (Tsintsius 1:201a). Altaic etyma **dak-* and **dab-* are found in Mg *dahin* 'again', *davta-* 'repeat' (Tsintsius 1:197-8 takes 'repeat' as secondary to 'hammer, rivet' and associates Evenki *dapča-* 'flatten, press; distribute', for which she also has a root *tavit-/tavič-*), Ma *dahin* 'again', *dahi-* and *dabta-* 'repeat'. Tsintsius 1:191-2 says Evenki *daki* 'again' is from Mongolian, but gives also Evenki *dakči-(-go-/-kta-)* 'repeat' and written Mg *daki-* 'repeat', OTk *takı* (?= Tk *dahi* 'also, more', *daha* 'more'). Could there have been pA **da-s-* or **ta-s-* as well as **da-k-* and **da-b-*? Is Finnish *taas* 'again' just a lookalike?

56 Starostin (1991:79, 118 n.9) compared ***sa ˙so-m*** with pTg **sesi-n* (**säsin*) which he reconstructs from words listed by Tsintsius 2:146b under Evenki *sesin* 'drove of horses, herd of deer, flock of birds', but I have doubts about the similarity in meaning. Starostin reconstructs pA **sesV* 'wild fowl, deer' and adduces J *sisi* 'deer'.

57 In an earlier work Pedersen (1931:338) became the grandfather of Nostratic linguistics, referring to the languages as "Nostratian".

[58] The faith is sometimes sorely tested. Miller 1980:115 miscites as "*is*" the MK noun *isk* (> *isk-i* > modern **ikki**). Too bad, for the final ···*k* fits nicely with Miller's Manchu *nisikte* (1990:13), of which he says *-kte* is "a Tungusic collective suffix" and therefore indicates that the word is a loan into Manchu from some other Tungusic language ("though no other Tungusic forms are registered") since pTg **-kta* "would be Ma. *-ha/-ho/-he*". Other Manchu words for 'moss' include *niokji*, *ni(y)olmon*, and *niyamala*, all sharing an initial similar to that of *nisikte*; the Turkish word is *yosun* ?< **nyosun*. Lamut words for 'moss' include (from Tsintsius & Rishes 1952:277a) *nyamalra*, *nyamal^{Y}či*, *nawta*, *nabukta*, and *ongka*; Evenki (from Boldyrev 1994, Tsintsius 1:489) *lālbukā*, *lālbikta*, *lelukte*, and (Tsintsius 1:95b) *sirive*; *buldukse* and *arna* are words for 'seaweed; algae'. Orok 'moss' is *napka*; Nanai *lengēki*.

Miller's "Old Silla" form *isi* is based on a gloss in 1145 Samkwuk saki "chapter 44, p. 445 in the edition of the Chōsen Shigakkai (Seoul: Chikazawa shoten, 1941)". An examination of that source (photo-reprinted in 1971) reveals that the reference is to a fourth-generation descendant of King (*NA-ˈMWOLQ* →) *NA-ˈKWOLQ* who is called *ˈI-SO PWU* 'Master Is', "also said *THOY-CWONG* ('moss elder')"; i.e., the man was known as "Master Is", which meant "Moss Elder", though 'Master' and 'Elder' are a superficial rendering of the Chinese words (cf Inoue & Ceng 1988:4:89 n.8). Miller misread the second phonogram as if it were Sino-Japanese, so his final *i* is to be disregarded. The same misreading and idea can be found in the Japanese translation of Samkwuk saki by Inoue & Ceng 1988 (4:90 n.7). The shape *is*, if genuine, may be taken to verify that even back in the 12th century final ···*sk* was reduced to ···*s* when not linked to a following particle or ending beginning with a vowel. Of the Middle Korean attestations:

(1) these must be *isk*:

ˈphalan isˈk i ˈnatwoˈta (1482 Nam 1:28a) 'green moss grew'

isˈk ul ˈpsule taoˈn i (1482 Nam 1:72b) 'swept away the moss'

ˈmu.l ey s hywoˈkon isˈk ul cus-twuˈtulye ··· (1489 Kup-kan 1:108a) 'pound fine moss in water [and then drink the juice]'

(2) these could represent *is[k]* or just *is*:

phuˈlun is ˈkwa (1481 Twusi 10:8b) 'with green moss'

is mwoˈtun ˈtay non (1481 Twusi 15:15b) 'bamboo on which moss has gathered'.

is ˈskin kilˈh ey n' (1481 Twusi 10:3a) 'on a moss-grown path'

is (1527 Cahoy 1:4b=8b) 'moss'

(3) these must be *is*:

phu˙lun i˙s uy an˙cwola (1481 Twusi 15:9a) 'I'll sit on green moss'

phu˙lun i˙s uy nwu˙[W]e 'ys.te˙n i 'la (1481 Twusi 21:37b) 'I was lying upon the green moss'

It is true that LCT 1971:231 and 1973:370 treated *-ki* as a suffix in the words "***iski***; **maktayki** < ***mak¨tay*** < ***makta˙hi*** 'stick'; **posiki** < ***pwo˙zo*** 'small bowl'". But while that might account for the nominative form */is˙ki/* it could not explain the accusative */is˙kul/*, for which we would then expect ****iski ˙l¼ol***. There is another MK noun of a similar shape: ***misk*** 'bait' (***mis˙k ul*** 1459 Wel 7:18b), from which is derived the verb ***mi˙ski-*** (= ***misk-˙i-***) 'get caught with bait'.

One problem with Miller's comparison is the unexplained lack of the initial nasal in Korean ***isk***. There is no written evidence for an initial nasal in this word at any stage of Korean; quite a few Middle Korean etyma are spelled with an initial ***ni-***-- and these were different from those spelled with the initial ***i-***--. The nasal does turn up in the various Ainu dialect words for 'moss' (Hattori 1964:202 #52: *nisinrus*, *sinrus*, *nirus*, *niur*, *nirek*, *nihur*) but that may be merely a coincidence. Phonetically, the Korean word is a fairly good match for Yakut *iskex* (Afanas^{y}ev and Kharitonov 1968:206a) 'fish roe, caviar', borrowed into Evenki as *iskeγ* (Tsintsius 1:331a). Finally, we should note the Korean expression **ikki kki-** 'moss grows' < ***is˙k i*** + ***˙ski-*** vi 'form, gather, cover, cloud; settle, cover' (see the example from 1481 Twusi 10:3a cited above).

59 To be sure, the small inventory of phonemes in Hawaiian does not keep us from ascertaining cognates that belong to proto-Austronesian etymologies. But if, let us say, only two or three of the over 930 other Austronesian languages had survived and the survivors just happened to be Yapese and Nganno it is unlikely that we could prove Hawaiian related to them. (I am indebted to R. Blust for information on these languages.) Whether the three Altaic languages, or the five macro-Altaic languages, are the only survivors of a large number of lost languages is something we have no way of knowing, of course, and it is unlikely that the particular languages would have been selected for survival on the basis of their intransigence for comparison.

60 In his sweet-and-sour review of Martin 1987 and elsewhere Miller (1988:417) makes much of my puzzlement about the history of the Japanese word *sigure* 'a shower (in late autumn or early winter)', for to him the word is clearly a cognate or borrowing to be added to an Altaic etymology that captured his fancy (Miller 1991b:322): "Poppe

has compared Mo. *siγuryan*, Khalkha *šūrγa* 'snowstorm' with Tg. Ev. *sigir* 'rain with wind and storm' (1960:61, 115, 131), implying an original Proto-Altaic **sïgūr* (Street 1974:26). Japanese has *šigure* (*shigure*) '[a] cold rain in autumn or early winter' [footnoted: The significance of the semantic shifts in forms for Proto-Altaic **sïgūr* is discussed in Miller 1986.] It is of course possible that the Tungus form is a borrowing from Mongol, though this leaves unexplained why the Tungus speakers would have had to go to another language family to borrow a term with such a semantic referent; nor is there anything in the phonology that would indicate a borrowing. But in that case and if indeed there never was a Proto-Altaic **sïgūr*, then from whom did the Japanese borrow their *šigure*? The problem is a nasty one for the anti-Altaicists." Etc., etc. Street 1974:26 glosses the Altaic etymon 'a rain or snow storm' and uses a double asterisk to indicate "a reconstruction for which evidence is drawn from only two major branches" as against his single asterisk for "a reconstruction based on data from all three major branches". (Neither rain nor snow kept the Turks from their appointed rounds.) But both the *-g-* and the *-e* pose problems for the explanation as a cognate, since they call for internal reconstruction as *-nk-* and probably *-ey* < *-aCi*, respectively. Three-syllable words in Japanese usually have internal structure if they are not loanwords, but why should the Japanese go out of their way to borrow a name for a weather phenomenon peculiar to Japan? (If I may echo Miller: The problem is a nasty one for the Altaicists. Etc., etc.) The vowel *e* in unborrowed Japanese words developed from the crasis of *a-i* or *i-a* and the word *sigure* has the earmarks of a noun derived from a verb infinitive *sigure[y]-* < pJ **sinkura-Ci*, the stem of which is probably complex itself. The stem *sigure-* is said to be a later formation based on the noun, but there are attestations from as early as 940. Man'yō-shū 786 has an example of another stem *siki-fur-* (or *-bur-*?), written with two graphs which could both be taken as semantograms, though the first might well be a semantophonogram if the morpheme for 'frequent' found in *siki-ri ni* is unrelated to the verb *sik-* 'spread it out' (see the verb stem *sikir-* H 'continue, be uninterrupted' in Martin 1987:750). The explanation runs something like this: **siki n[i] pura-* > **sik[i]-bura-* > **sigura-* + deverbative *-Ci* (or just *-i*) attached directly to the stem (not the infinitive) > *sigure[y]*, whence the later-attested verb stem *sigure[y]-* by back-formation. The **pura-* L is 'to precipitate' < **pu-ra-* 'fall' (cf **pu-sa-(Ci)-* 'lie/lay down', originally transitive), which may be related to the Korean transitive verb *spu˙li-* 'sprinkle it' and the defective infinitive *˙sp-a* 'fall', if the *s-* in those

forms is taken as the common intensive verb prefix. In Yonaguni the meaning of *sigure* is expressed by *sittši-nu-ami* (Miyara 1930:153a). That may reflect a (slightly irregular?) development from **siki no ame*, or more likely it is a reflex (also irregular) of *setu no ame* 'seasonal rain' with the Chinese loanword for 'season'. The common Ryūkyū words for 'cold (seasonal) rain' come from *simo* 'frost; cold rain', and that may suggest further possibilities if *simo* can be rescued from the Altaic and Nostratic etymologies in Miller 1987b:38. Martin 1987:523 pointed to Yoshida 1979:87 for the proper direction to go in exploring *sigure*, the history of which must be intertwined with that of the OJ adjective *sigey-* < **sinka-Ci-* and the verb *sigeyr-* < **sinka-Ci-ra-* 'grow thick/dense'. The meaning of the Japanese noun does not include 'snow' nor does it emphasize 'cold', rather it refers to a continuing spell of intermittent drizzle or just the dreary overcast skies that characterize such a period. Miller was apparently unaware that the word also refers to the continuing choruses of cicadas (*semi-sigure*) and, for some reason, to a pickled conserve of shellfish and ginger. (Does the flavor linger on?)

61 Yet Miller's very first attempt at internal reconstruction (1964) observed, correctly, that the evidence from morphophonemic alternants coincides with the philological interpretation of the Old Japanese phonograms to show a richer vowel system than that of later Japanese, and that this could be confirmed by "the comparative method" applied to reconstructing earlier forms of the vocabulary of modern Tōkyō and what he calls the "Satsuma" dialect, for which he relied solely on the data of an amateur observer's 1915 description of Kagoshima speech in disregard of the quite extensive and more reliable observations of the dialects of southern Kyūshū later made available by Japanese linguists. For the shortcomings of the comparative reconstruction, see Aoki 1974. The resulting account of evidence for the OJ vowel distinctions was recycled in Miller 1967a:181-90, the methodology of which was criticized by Chew 1969:206-7 (see also Wenck 1972:511). With respect to Miller's conclusions, it can safely be said that there is simply NO evidence for the vowel distinctions of Old Japanese in any dialect area north of the Ryūkyū islands. The Ryūkyū evidence, first noticed by Hattori and Shibata, is described in Martin 1987.

Since the 1964 paper Miller has had little favorable to say about internal reconstruction, or indeed internal evidence of any kind, "incestuous attempts to derive one language from itself" in the contemptuous words of Miller 1988:416-7. He does not consider the

possibility that his vaunted use of "the comparative method" may mask linguistic miscegeny. The notion of a hybrid language would be alien to Miller's way of thinking, although it was never far from the mind of his fellow comparativist the late Murayama Shichirō (as in Murayama 1979), who believed that Japanese may be related to both Altaic and Austronesian without those groups being related to each other. I have not seen the 1981 Japanese translation of Miller 1971 which he refers to as "Miller-Nishida" but I notice that the title (as cited in Miller 1991a:204) is *Nihon-go to Arutai shogo*, with no mention of the issue-begging "Other". To be sure, a literal translation would be clumsy in Japanese but the meaning can be conveyed by rephrasing it as *Arutai shogo no naka no Nihon-go*, which carries the emphasis on "Japanese" intended by the English, for in phrase structure English and Japanese are mirror images of each other. Since Nishida is noted for advocating the theory that Japanese is related to Tibetan, can this revised version of Miller be a prolegomenon to, say, "Tibetan and the Other Altaic Languages"? Indeed, using the same methodology Miller espouses, a substantial case can be made for the relationship of the Tibeto-Burman languages to Japanese and Korean, and even for that of Dravidian, despite Miller's aversion to the work of Ōno Susumu. Over 400 sets of lexical comparisons between Korean and Dravidian that were made by Clippinger 1984, following the impetus of Hulbert 1905, set forth extensive phonetic correspondences in basic vocabulary. And Burmese enjoys both syntax and morphophonology that is strikingly similar to those of Korean, though the similarities are probably accidental. A comparison of Burmese with Japanese was made by Lowell 1895, and the geography was vastly expanded by Parker 1939. A tidbit for the susceptible: the Burmese postnominal particle *kaq/gaq* marks not only the subject, like Japanese nominative *ga*, but also the source, like the Japanese ablative-elative *kara* 'from', which sometimes also marks the agent (Martin 1975:45). Surely a practitioner of the Little Jack Horner school of comparativism can come up with a rho tertium to account for the Japanese *-ra* and that creaky Burmese tone that is represented in the transcription by *-q*. For a few astute remarks on sweeping theories of language relationship see Matisoff 1990. The truly adventuresome Long Ranger might enjoy perusing the 1991 book by Yoshiwara R. [aka Roger Ahlberg] called Sumerian and Japanese: a comparative language study (Chiba: Japan English Service, Inc.). Its author can appeal to the fact that over 400 stones found in Japan have inscriptions alleged to be of Semitic or Sumerian origin; for a recent find see News Bulletin No. 10, Petrograph Society of Japan (1991). The study by

Fortescue 1981b pursues possible common origins for certain verbal markers in Eskimo-Aleut, Tungus, and Japanese. (See also Bonnerjea 1975/1979 and Rapelli 1971-2, 1983-4.) A related preliminary paper, Fortescue 1981a, was delivered at a symposium I attended in Norway and it was included in the occasional publication that reported the proceedings. That is the paper denounced by Miller 1985:119 for an "unparalleled exhibition of plagiarism" in using as input data some of the comparisons he (the doyen) had published. Yet I notice Miller's name in the bibliography of the preliminary paper and both Miller 1967a and 1971 are frequently cited in the larger paper. Even Martin 1966 made it into the bibliography (and citations) of that paper. Since the allegedly purloined material in the short paper included some Miller got from me, with my blessings, perhaps I too should feel offended. But etymologies are all too easily come by, and all too easily abandoned, so I am pleased when I see one of my ugly ducklings still alive and well in the published results of new investigations, whether I agree with the investigator's conclusions or not. Help yourself.

62 A more likely candidate: Okinawan *mandoon* 'is/has much' (also *magi-* 'be big'). But it, too, is not directly related. Korean **/mani/** is **mānhi** < *¨man ˙h-i*, the derived adverb of *¨man ˚ho- / ˙ho˙y-*, an adjectival noun probably from *¨MAN* 'myriad'. There is no evidence that these words existed before their attestations in 1447. Nor is there any connection with Dagur *mani* 'crowd, herd, group', Chukchi **mk* or Nivkh *ma:ɣa-nt* 'numerous' and other forms mentioned in Martin 1966:249 (#296) and Starostin 1991:112, 144-5 n.186, 276, though some of those may be related to each other. That is, I would now remove Korean from the comparison.

63 Fortuitous resemblances between words of geographically remote languages are easily dismissed, especially when the history of the words in each language is clear. It would be foolhardy to compare the mysterious Lamut word *nʸekan* = *nikon* (Tsintsius & Rishes 1952: 682b) with its English gloss 'neck', even though the latter cannot be traced back before Germanic. The other Tungusic languages have *nikinma/nikimna* and variants (Tsintsius 1:591a) and *mongon* ('throat, neck' 1:546a); Poppe 1977:222 compared Evenki *nikimna* with Finnish *nikama* 'vertebra' and Hungarian *nyak* 'nape'. Surely no one would compare the Korean verb *mac-* with its English gloss 'match'. Nor will we suggest that the MK *toT-* is connected with the English word 'trot', even though the Middle High German cognate meant 'run', and the intrusion of the /r/ opens up inviting avenues for speculation. It is

tempting to compare Chuvash *nürĕ-* 'damp, moist' with Japanese *nure[y]-* < pJ **nura-Ci-* 'get wet/damp' and *nuras-* < pJ **nura-sa-* 'dampen' (and both with Mg *noro-* 'get wet' and *noyt* 'dampness'), though we are told that there are virtually no native Turkish words beginning with /n/ (Clauson 1972:774a). Miller has compared J *nur-* < **nura-* 'paint, smear' (for which he reconstructs < **nir-*) with Manchu *niru-* 'draw, paint' and compares pA **ǰï:r$_2$-u-* 'draw, scratch, write' (Street 1974:15) with quite a different Chuvash word, *śır-* < **ǰi:r-* 'write'. Poppe 1960:28 included OTk *yaz-* 'write' and Starostin 1991:118 adduces MK ***nilk-*** 'read' and a ghost form ****nilwu-*** which is probably a mistake for the stem of what Wmk gives as ***kul niluten i*** (1518 Ilyun 48), but if that is not itself a mistake (the Taycey-kak reproduction of the text has ***kul nilktela***) it must represent the stem ***nilG-/nil^{w}o-*** < ****nil^{w}oG-*** < ****nil^{w}ok-*** 'say it', from which ***nilk-*** may very well be derived. (A bit far from writing and smearing.)

Even for languages geographically and historically in close contact we should stay on guard against the presumption that resemblant means cognate. Miller's acceptance (1978:10-1) of the equation of Kokwulye ****yasi*** 'wolf' = MK ***yez^{w}o / yezG···*** 'fox' (< ****yes^{w}ok*** ?< ****yosok***; see Martin 1992:239) may be correct, as Sasse 1982:719 believes, but his description of the philology is a bit misleading and incomplete. It is true, as he says, that the form ***yezu*** occurs in the "Tokyo University Library exemplar" of [Hwunmong] Cahoy 1:19a but in the Hiei-zan "exemplar" (1:10a) the form is ***yeu***, though ***azo*** 'younger brother' is spelled with *z* in both versions. (The two printings are both supposed to be taken from the 1527 first edition.) The spelling ***yehwo*** appears in 1744 Esey Sohak enhay 4:34 where the equivalent passage in 1586 Sohak 4:43a has ***yeo***, but LCT 1964:463b was mistaken in citing that for 1481 Samkang hyo:27b, which is correctly given by Wmk 5273a as ***yezo***. The usual MK form was ***yezo / yezG···***. In many modern dialects 'fox' is **yengwu** and there are several forms with **yengk···** and **yekk···** + various suffixed elements. Miller seems to have taken the 'wolf' from Lewin 1973:26; Lewin got it from LKM 1964:19, who first put forward the etymology but with no elaboration. The character in the relevant Kokwulye placename (Samkwuk saki 37:4 [5a,3], p.378 of the 1928 Chōsen-shi gakkai edition) seems to mean 'monkey', 'a mythical humanoid animal', 'weasel', or 'yelping of a dog' and it is followed by the character ***CHYWEN*** 'brook, river', while the phonograms taken to be ****yasi*** are followed by the character ***˙MAY*** 'buy', which (like other scholars) Chen So.yong 1990:182 takes as ***moy*** (< ****muli*** 'water',

105), a synonym of *nali* 'stream'. (The MK word for 'stream' is *ˇnayh* < **naˇlih* and *ˇmoyh* means 'meadow', for what that is worth.) To be sure, Chen So.yong 1990:256 (#561) prefaces that name with "*LANG CHYWEN* [wolf river] county originally ··· ", but he does not tell us where he got that preface. Notice, however, #599 (p. 379 of the 1928 edition) "MONKEY RIVER COUNTY [is] also called *YA-ˇZILQ ˇMAY*", which could be the source of the "wolf" interpretation. However, more explicit information is offered by Inoue & Ceng 1988 (3:238), where the name is said to have been changed to *LANG CHYWEN* 'Wolf River' during the reign of the 35th king of Sinla, Kyentuk (reigned 742-64), when a lot of the names got monkeyed with. So that takes care of the "wolf", all right, but for the "fox" there seems to be no evidence beyond the phenomenon to be explained, the value of the phonograms *ˇYA* and CORPSE. It is possible that "Monkey/Weasel [or Yelping] River County" was noted for its foxes or wolves. It is possible that the character is a scribal mistake for one of the two characters in **sī-lang** 'jackals and wolves' < *suy* < **soy* = *CCAY* 'jackal' + *LANG* 'wolf'. If so, the reading **yal* or **yel* with CORPSE taken (to Miller's distress) as the liquid could be a reasonable approximation to some version of the word *ˇilhi* 'wolf' = *ˇilhuy* (1489 Kup-kan 6:6b, 6:32b) = *ˇilhoy* (1466 Kup 2:64a), the accent of which suggests a basic monosyllable *ˇil(h)* + a variant of the familiar noun suffix *-i*. (I will try to resist the temptation to drag in J *inu* 'dog' for that word has been well flogged elsewhere, e.g. in Starostin 1991:49,71,72,101.) As is pointed out by Miller 1987b:45, Ramstedt connected the Korean word for 'wolf' with Evenki *irgi-či* '(the tailed =) wolf' from *irgi* 'tail', improbably enough coming from Poppe's proto-Altaic **kudur$_1$ka*, according to Tsintsius 1975a:306. (But in Tsintsius 1975b 1:325a and 423b the etyma IRGI and KUDURGA are treated separately.)

It is also possible that the Kokwulye word has nothing to do with the Middle Korean word. Miller offers no external etymologies that would prevent our reconstructing **yal* or **yel* for the Kokwulye word on the basis of the use of the character CORPSE elsewhere to represent what is later a liquid though it really "ought" to represent a sibilant at all times and in all languages, according to Miller (see n. 36), a view apparently shared by Lewin (1981:209) who transcribes **khïs* for BIG + CORPSE, equivalent to MK *ˇkhul*, as well as **kosi* for 'cape', written with the phonograms OLD + CORPSE + THIS, which is equated with the modern postnoun ··· **koci** (dialect) = ··· **koc** < ··· *ˇkwoc* 'cape' (in the reading of a placename *ˇanlim ˇkwoc* "Dark

Forest Cape" in the Chinese text of 1445 [1]Yong 1:36a), where the sibilant reading is more convincing. Cf Sasse 1982:713 who quotes a passage from Samkwuk [1]yusa 4 (183, 10) that clearly says there are three dialect forms for 'cape': *kasul* (*KA-ˈSULQ*), *kasye* (*KA-SYEY/-SYEN* [-WEST]), *kasyey* (*KA-SYEY* [-NEST]), as well as the one written OLD + CORPSE (cf Chen So.yong 1990:249, #146). The MK form ***ˈkwoc***, however, may well reflect the verb stem ***kwoc-*** 'insert [a promontory between the arms of the sea]', provided we assume that the difference in accentuation between noun and verb is assigned by rule. If so, the Middle Korean word could be unconnected with the Kokwulye word, however that was pronounced.

Kim Tongso (1981:134 n.95) observes that in Samkwuk saki 36 the cited name "Cape Citadel County" is reported as having been changed into the later "Long Citadel County" (cf Inoue and Cho 1988:3:219). He observes that the Ceycwu stem for 'long' is ***kel-***, equivalent to MK ***ˈˈki(l)-/kiˈl[ㅱ]-*** < ****kiˈlㅱ-***, and the Ceycwu word for the long rainy season is ***kwol-ma***, equivalent to **cangma** < ***tyang-mah*** (the first part is from *TYANG* 'long'), so that Kim Tongso reconstructs a "proto-Koreanic ****ŋōl-*** 'long'". Kim Tongso's ****ŋ-*** seems to be based on the correspondence of MK ***k-*** with Tg ***ŋ-*** but there is no internal Korean (or Kokwulye) evidence for anything but ****k-***, so I think we must assume that the pK stem for 'long' was something like ***?*kwoˈlo-***, ***?*keˈlo-***, or most likely ****kyoˈlo-***, and that the unexplained THIS is a phonogram to spell the derived-noun suffix ***-ˈi***. That means that the Kokwulye placename could be explained as ***k(w)oli*** < ****kyoˈli***, the equivalent of MK ***kiˈli*** 'length'. Once again, the CORPSE engages in exotic "lotusism" rather than logical "sigmatism". Sasse (1982:713-4) would have the sibilant survive all the way into the fifteenth century (thereby defying Miller's "re-Altaicization") as part of the word 'rice plant' written ***ˈPYELQ-SO*** in 1400+ Kwan-yek (= Cháoxiān-guǎn yìyǔ) #174, from which Sasse would reconstruct ****pyes*** for the word that was attested somewhat later in the century (1481) as ***ˈpye***. That is less convincing than the usual explanation (as in Mun Senkyu 1972:437) that it was an attempt to write a compound noun ***ˈpye*** + ***ˈpsi*** 'rice seed'. (The compound was not otherwise attested as such for Middle Korean.) Sasse need not wonder (714) what happened to the ***/p/***, since the fifteenth-century author probably heard ***/ˈpyepˈssi/*** as if it were ***/ˈpyeˈssi/*** or, at most, with a glottal closure of the first syllable, for the contemporary northern Chinese pronunciation of the characters would have been [pyé(q)sī] with at best a neutralized relic of the entering tone

at the end of the first syllable. It is hard to see just why Miller takes such inordinate pride (Miller 1979:365 n.14) in being the first in print (also the last?) with the news that the Kokwulye word for 'garlic', written with the characters BUY + CORPSE (with no obvious semantic overtones), was **mais* or **maiš* rather than **mail*, while forced to acknowledge that the cognate forms adduced from Middle Korean – as well as the phonograms of 1250 Hyang-kup (LKM 1963:70-1), from Mongolian, and from Old Japanese all have liquids, not sibilants.

64 In effect I am still maintaining the position of Hattori 1948a:102: "although we cannot say that there is any complete linguistic proof, Korean comes to mind as the language for which the probability of relationship to Japanese is the greatest. Still further we might put forth the probability of relationships with the Altaic languages -- Parker has conjectured a similarity between Japanese and [the] Tibeto-Burman languages, but we have not been able to convince ourselves of this theory." It will be noticed that Hattori did not use the term "Altaic family", but later in his paper (115) he makes his position on that point clear: "it is difficult to prove the mutual relationship between the Turkic, Mongolian and Tungus languages making up the Altaic family with a certainty equal to that which can be demonstrated in the case of Indo-European languages. But the probability that these -- three languages do have a mutual relationship is quite great." More recently Starostin 1991:115 independently reached a similar conclusion.

65 Kortland 1993:64 finds that the comparisons in Starostin 1991 suggest "that verbal roots had Low Pitch in Proto-Koreo-Japanese. This is reminiscent of the situation in Vedic and Proto-Indo-European." He looks even beyond Macro-Altaic: "A detailed comparison of the reconstructed systems is needed before we can pass judgment on the hypothesis of a single Eurasian (Indo-Uralo-Altaic) language family which stretches all the way from Iceland to the Ryukyu Islands."

66 We should not dismiss out of hand, however, such parallels as:

¨solW- < **so˙lo˙po-* 'inform' : OJ *sirabey-* < pJ **sira-n[a]-pa-Ci-* 'investigate'

¨kolW- < **ko˙lo˙po-* 'line up' : OJ *kurabey-* < pJ **kura-n[a]-pa-Ci-* 'compare'

¨tulW- < **tu˙lu˙pu-* 'pierce' : OJ ?**turabey-* < pJ **tura-n[a]-pa-Ci-* 'pierce'

If the Korean *-W-* really did go back to a voiced obstruent, then these three verbs could be taken as a cognate set for OJ *-b-* and call into

question the internal reconstruction of that phoneme as pJ **-np-* < **-n(a)-pa-*. We are tempted to add the comparison of ¨***twulh*** 'two' with *turu^{b}/$_{m}$-* ?< **turu-n[a]-pa-* < **tura-n[a]-pa-* 'mate' (cf *turane[y]-* < **tura-na-Ci-* 'link' and *turanar-* < **tura-na-ra-* 'be linked') but are deterred by the background of the Korean word, for which see (9) of §8.0. And the comparison for 'pierce' presumes an unattested Japanese stem based on the first element of the compound *tura-nuk-* 'pierce' (and requiring a modification of the explanation of that in Martin 1987:775). To be explained also are the vowels of the first syllable. Kim Tongso 1981:47-8 compares the stem ¨***kolW-*** with pTg **kolbo-* 'line up, link', Mg *xolbo-* 'join, tie, unite', and Yakut *xolboo-* 'join, unite' – also (Krueger 1962:274) *xolobur* 'comparison'. Notice too MK ***(˙)kolp*** = ˙***kyep*** 'double', ˙***kol˙pho-*** = ˙***kolp °ho-*** vi 'get doubled' and the adverb ˙***kol˙ph-wo*** derived from that. It should be mentioned that Kim Wancin 1971 compared ¨***solW-*** to Uighur *sav / sab* (and modern Turkish *söz*) 'words, speech', positing for Korean a metathesized version of **sab-la-*, containing the common Turkic and Mongolian verbalizer *-la-* 'do'. He brings into the comparison the older form of the Japanese epistolary auxiliary *sooroo* < *safurafu* < *saburaf-* (before Heian *samuraf-*; see Martin 1992:747 for an internal etymology) 'serve', the source of the well-known noun *samurai*. He supports the metathesis by comparing ***alh-*** 'ail' with Turkish *ağrı* 'painful'; the basic meaning of that seems to be 'heavy', but Mal^{y}kov 1974:389 adduces OTk *ala (bol)* '(get) ill' (Nadelyaev 1968:32b). Kim Wancin finds Altaic *-la-* 'do' also in comparing ¨***a(l)-/a˙lo-*** < **a˙lo-* 'know' with Turkish *an-la-* 'understand', built on a noun **an* for which the evidence seems to be Tk *a:ng* (Sevortyan 1974:153) = OTk *anga-* 'understand' (Nadelyaev 1968:46), cf *anglağ* (Clauson 1972: 185a) 'possessing understanding'. Mal^{y}kov 1974:390 offers the same comparison. Kim Wancin would connect his etymology also with ¨***mal(s)som***; see n. 43 for other explanations. LKM 1959 compared ¨***solW-*** < ***˙***sol˙po-*** with (Tungusic) Solon *silba-* 'teach, name, call'. Miller 1979:361 thinks the "Old Silla equivalent" ended in a sibilant (*s* or *š*), because of his dogged insistence that the phonogram CORPSE simply cannot write a liquid despite the longstanding Korean tradition of so using it, and he ties in his misjudgment on that with his beloved *r_2* thereby connecting the verb to "pA **sér$_2$* 'know', cf. OJ *sir-* 'id.'" The proto-Altaic form must be a hasty mistake for **sér$_2$i-* 'to awaken, feel, consider, mistrust' (Street 1974:25); that differs from Poppe (1960:29, 82, 135, 138), who has **seri-* with the unmarked *r* that is to be taken as *r_1*, and had earlier (1952:573b) written that "the primary

root is *se-*; cf. Ma. *se-* 'speak, say', ... ". Notice Chuvash *say-* in Kakuk 1976:332, and disregard, of course, English /sey/ "say" as well as the Korean stem in the etymology of pA **sēŕi-* in Starostin 1991:74 and 91, which is badly misglossed – the verb (**sali-** < ***sa˙li-*** = ***se˙li-***) means 'coil [one's body] up, recoil'. No one seems to have adduced the MK adjectival noun ***solp-solp*** 'clear, distinct', as in ***mozo˙m i solp-solp ˙ho.ya ˙za*** (1463 Pep 5:56a) 'only when the mind is clear', used to translate a Chinese expression that means something like 'gain a clear understanding', and its derived adverb ***solp-solp ˀi*** (?1468- Mong 43-4) 'with clarity'. This etymology brings us full circle back to *sirabey-*, with which we will leave the matter for the moment.

67 The Murayama-Miller-Menges (or "3M") view of the OJ adjectival attributive ending *-kyi* (Murayama 1957:130, Miller 1975:22-4, and Menges 1975:11) is as a survival of "the original Altaic unity" (one of Miller's favorite buzzwords) that is attested at the other end by Turkish "locative *-qy/-ki* which in the historic period ... appears exclusively in adnominal function" (Menges 1975:11). This view ignores the peculiar distribution of the endings *-kyi/-si* in the late-blooming adjectival paradigm of Japanese, the strangely opposite distribution of the perfect auxiliary *-si/-kyi*, the fact that all these forms were rather loosely joined to independent words (the verb infinitive, the adjective stem), and the total absence of evidence for any of the morphemes in the Ryūkyūs. As long as the three M's are at it, why not include the Persian adnominalizer, which is the relative pronoun *ki*, and push the time frame back to "the original Nostratic unity"? To be sure, the Persian word has long been explained as borrowed from an Indic interrogative, but that explanation is not above suspicion. Menges 1984:238 states his conviction that "the most important linguistic category for the comparison with other languages or even language families is that of the morphology ... neither the phonology nor the syntax, least of all the lexical material offer any resistance to change which might be compared to that of the morphology". That claim is open to question when we consider the massive loss of inflection in certain languages (English comes to mind) and the replacement of grammatical markers by creative uses of free words and phrases in many languages, such as Korean and Japanese, to say nothing of the reduction and attachment of personal pronouns and noun classifiers that engender various kinds of inflectional paradigms in languages of quite different types. For an exploration of morphological resemblances in Japanese and Korean, see Martin 1990, making the following corrections and additions:

490,18. For "hands')" read "hands'; 22:3 *NGWEN-ul* 'vow')"
490,22. For "1977" read "1976".
494,14. For "particle than" read "particle that".
494,last line. For "of *o[mo]*" read "of *mo[no]*".
498,22. For "loocks" read "looks".
504,n22,9. For "SK *twu.*" read "SK *two.*".
504,n22,14. For "horizontal" read "vertical".
504,n22,15. For "vertical" read "horizontal".

See also Martin 1995 and 1996d.

68 Perhaps I misjudge Miller's position (or "Stellung" as he might prefer to put it), for in Miller 1987b:38 he speaks of "the important Nostratic ... origin of pA **x-*" in a footnote apparently expressing the ideas of K.H. Menges, who was an early convert to Nostraticism. If the origin is "important", I guess Miller must think that it exists. The Nostratic hypothesis as it was set forth by the late Illich-Svitych holds that the Indo-European, Afro-Asiatic (Hamito-Semitic), Kartvelian (South Caucasian), Uralic, Altaic, and Dravidian languages are all related and that the relationship can be demonstrated through sound laws exemplified in cognates, allegedly using the same methodology as the Indo-Europeanists and (if less persuasively) the Altaicists. For more on that school of thought, see Austerlitz 1991, Shevoroshkin & Manaster Ramer 1991. Apparently the more languages swished around in the alembic, the headier the theory that is distilled. The next daring step is to embrace those zigguratic comparisons of Greenberg and, earlier, of Swadesh. It should be noted that Illich-Svitych's teacher Ivanov (1986: 60) holds that Turkic, Mongolian, and Tungusic go back separately to "east Nostratic", leaving proto-Altaic something of a mirage. (Illich-Svitych had thought it the earliest to split off from Nostratic, implying a period of Altaic vs non-Altaic Nostratic.) I am somewhat friendlier toward Altaic, feeling that it is perhaps more than 50% likely (and Macro-Altaic rather less than 50%) but I place the probability that Nostratic is a provable proto-language at no more than 20%. Ramstedt 1957:15 thought proto-Altaic (including Korean) to be only 4,000 years old, but Starostin 1991:62, using lexicostatistics, has it about twice as old, and that is the age (around 8,000 years) implied by Vovin & Manaster Ramer ?1996 who compare the vintage to that of Afro-Asiatic. (Starostin 1991:106 gives pKJ an age of 5-6,000 years.) If Nostratic is 11-12,000 years old, as Dybo & Terent^{y}ev 1984:14 have it, the lexicon must have suffered such erosion as to leave very little to build a theory on.

69 Even such index-sensitive authors as Martin and Miller have failed to provide finder lists for the English glosses of forms cited. Martin 1997, however, includes a section that converts the list of Middle Korean verb stems so that they can be found from the English glosses. I hope that a contemplated revision of Martin 1987 can include handy lists of a similar sort. Karlgren 1927 provides an "English Key" that is very helpful in tracking down Chinese words, but that good example has been little emulated. Commendable exceptions are Yamamoto 1969 and Kane 1989.

70 Instead of the thicket of *op. cit.*'s, *loc. cit.*'s, *infra*'s, *supra*'s, and sicko *sic!*'s that lend a false air of authority to the writings of our scholiasts, it would be useful to see validated the sources of the many forms cited vaguely as "Mo." or the like that are taken from Poppe and (especially) Ramstedt, among others, for they are rife with errors both of form and of meaning. Some of the words are quite obvious and therefore need no "*loc. cit.*" references to the secondary literature, nor even the more useful references to the primary sources, but other forms are difficult or impossible to find in the available dictionaries. The Korean forms in the older comparativist literature might best be discarded altogether, but with most of the forms from the other languages there is no need to start from scratch (or *ab initio* as the erudite might prefer to put it), though caution is advised.

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¹Yi see also LHS, LKM

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*¨kiT- = ¨kit-/ki˙l(ᵘ⁄ₒ)- < *ki˙tᵘ⁄ₒ-* 'pump, draw water' 12
kith- vi 'remain' 98
*¨kiW- = ¨kip-/ki˙W[ᵘ⁄ₒ]- < *ki˙pᵘ⁄ₒ-* vt 'sew (up), patch, mend' 21
ko˙cang 'end, extremity; extremely, most' 37, 97

ˈko(l)-/ˈko·l[o]- < **ˈko·lo-* 'grind' 9, 10, 41, 42
[ˇˇ]ko(l)-/ko·l[o]- < **ko·lo-* adj 'be sideways, horizontal' 13, 41
[ˇˇ]ko(l)-/ko·l[o]- < **ko·lo-* 'change it' 12, 40, 75
**[ˇˇ]ko(l)-/ko·l[o]-* = **[ˇˇ]kot-/ko·l[o]-* < **ko·to-* 'say' 12, 13, 75
ko·li- vt 'hinder or obscure it' 94
ˈkoli- vt 'whack, cut' 98
koli-ˈGwat- 'conceal' 31
ko·li-ˈski- vt 'block, impede, obscure; get hindered/obscured' 94
kolo-ˈWi 'a fine rain, a drizzle' 31
(ˈ)kolp = *ˈkyep* 'double' 110
ˈkol·pho- = *ˈkolp °ho-* vi 'get doubled' 110
ˈkol·ph-wo adverb 110
ˇˇkolW- = *ˇˇkolp-/kol·W[o]-* < ?**kol·po-* < **ko·lopo-* vt 'line it/them up, compare' 23, 85, 109, 110
kol·Wa 85
ˈkom-$_1$ 'bathe; wash (hair)' 25
ˈkom-$_2$ (*ˈnwun ~*) 'close (the eyes)' 25
koT- = **[ˇˇ]kot-/ko·l[o]-* < **ko·to-* 'say' 12, 13, 75
ˈkot ˈhi 'like' 31
[ˇˇ]koW- = *[ˇˇ]kop-/ko·W[o]-* < **ko·po-* vi 'stagnate' (kōy-) 22, 23
ˇˇkoz- = **ˇˇkos-/ko·z[o]-* < **ko·so-* < **ko·co-* vt 'cut' 26, 31, 96, 97
ˇˇkoz or *ˇˇkos* (< **ko·so* < **ko·co*) 'brink, edge, limit' 37, 85, 96
ko·zay 'scissors' 68
koz·Gay < **ko·z[o]-ˈkay* 'scissors' 97
kozol(h) 'autumn' 53, 97
ku 'that; you' 45
kuch- vt 'cut off, sever; end it' 98
kul 'writing' 32
kulG-/kulu- < **kuluG-* < **kuluk-* adj 'be wrong', vt 'untie' 31, 50
k^{w}olk- vt 'scratch' 98
ku·lus 'dish' 46
ku·lus 'by mistake; a mistake' 50
ˈkul-ˈWal = *ˈkul-ˈGwal* 'writings' 32
ku-ngey 'there' < *ku-ngek (ˈey / ˈuy)* '(in) that place' 30
kus 'line' 70
-ˈkuy adverbative 32
ˈkuy·Gwun 'feeling' 32
kuyzi- < *kuz·Gi-* '(1) get pulled; (2) hide it' 30
ku·zey 'a private/secluded place, a nook' < *kuzu-ngek (ˈey)* '(in) a hidden place' 30
kuzG-/kuzu- < **kuzuG-* < **kusuk-* vt 'pull; draw a line' 29, 30, 70
kuz·Gi- = *ku·zi-* 'hide it' 30, 70
ku·zi- 'hide it' 30, 53
kuzuk 'secluded, ··· ' 30, 70
ku·zum 'limit' 30, 70
ˈkwa 'with' 33, 85
ˇˇkwa·sil 'fruit' 52
kwey 'crab' 38
ˇˇkwey 'chest, case' 38
-ˈkwo gerund 32, 54
ˈkwo postmodifier 'question' 33
kwo 'that; you' 45
kwoc- 'insert ··· ' 108
··· ˈkwoc 'cape' 107, 108
kwoc < **kwo·co* 'flower' 45
ˈkwoh 'nose' 45
kwoh 'storeroom' 92
ˇˇkwolq- vi 'fester' (= *[ˇˇ]kwolm-*) 25
ˇˇkwol$_1$ 'valley; deep hole' 39
ˇˇkwol$_2$ 'sedge, rush plant' 39
ˇˇkwol$_3$ 'coffin, coffer' 39
kwo·lang 'furrow' 39
kwolh- adj 'be unfilled, be partly empty' 39
kwolhang 'furrow' 39
ˈkwo·li 'a (wicker) hamper' 39
[ˇˇ]kwolm-/kwol·m[o]- < **kwol·mo-* vi 'fester' 25
kwol-ma [Ceycwu] 'the long rainy season' 108
kwoloy 'hypocaust' 39
ˈkwom particle 'each' 33
ˇˇkwom 'bear' < *kwo·ma* 33, 35, 45
kwop-$_1$ adj 'be bent' 24, 53
kwop-$_2$ vi 'double, get doubled' 24
kwo·pi 'a bend' 51, 53
ˈkwos particle 'precisely' 33
kwosa·li 'bracken' 52

kwosoy 'coriander' 52, 55
ˑkwot 'place' 45
¨kwo[W]- = *¨kwoW-* adj 'be pretty' 51
¨kwo[w]- = *¨kwo[W]-* = *¨kwoW-* vt 51
¨kwoW- = *¨kwop- / kwoˑW[o]-* (also *kwoˑ[Wo]-*) / **kwoˑpo* adj 'be pretty' 21, 22, 51
¨kwoW- vt 'bake, roast' 51
¨kwoˑWi = *¨kwoi* = *¨kwoyi* 51
¨kwoy 'cat' 38
kwuc- adj 'be bad' 31
kwuˑcic- = *kwuˑcit-* 'scold' 50
kwucilam = *kwucilem* 'scolding' 50
¨kwul 'chimney, stovepipe' 39
kwuˑli 'copper' 81
¨kwulm- / kwulˑm[u]- < **kwulˑmu-* vi 'hunger, go without food' 25
ˑkwuˑlwum / ˑkwulwum 'cloud' 46
kwup- 'get/be bent, bend' 6, 7, 24, 53, 94
kwuˑpi 'a bend' 51, 53
kwuˑpsu(l)- 94
kwusˑpu(l)- 'fall down/flat' 94
kwuˑsul 'bead' 52, 55
kwut- 81
kwuˑtul[h] 'hypocaust' 39
kwutwu 81
¨kwu[W]- 'bake, roast' 51
¨kwuW- = *¨kwup- / kwuˑW[u]-* (also *kwuˑ[Wu]-*) < **kwuˑpu-* vt 'bake, roast' 6, 7, 22, 39, 51
**¨kyeT-* > *¨kyĕT-* 'get oily' 75
¨kyeT- = **¨kyet- / kyeˑl[u]-* < **kyeˑtu-* vt 'weave' 12, 72
kyeˑzul(h) 'winter' 53, 97
-ˑla (after copula) = *-ˑta* 33
-ˑle- = *-ˑt^{e}⁄a-* 34
ˑlwo particle 21
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lyemthwong 'heart [the organ]' 67
ˑlywu[k]-ˑwel = *nywu[k]-wel* 'June' 32
-m 37
mac- 'meet' 34
¨ma(l)- / maˑl[o]- < **maˑlo-* 'desist, refrain from' 15, 77
ˑmal 'measure' 45
¨mal 'speech' 38, 91
maˑla 16
maˑli = *meˑli* 'head' 15, 20
¨malssom 'speech' 38, 39, 93, 110
mal-¨Wam = *ˑmal-¨Gwam* 'caltrop' 32
ˑmang 'net bag' 44
¨man ˑh-i 105
¨man °ho-/ˑhoˑy- 105
¨manˑzil ˑey = *¨man.il ˑey* 70
mast- 'take charge of' 48
--- ¨maˑta 'each' 15
math- 'sniff, smell it' 34, 48, 98
math ?< **maˑtoh* 'yard' 45
ˑmay 'whip' 44
¨may 'hawk' 38
-mi 37
mich- vi 'attain, reach' 98
ˑmilh 'wheat' 37, 45
misk 'bait' 101
miˑski- (= *misk-ˑi-*) 'get caught with bait' 101
mith ?< **miˑt^{u}⁄oh* 'bottom' 45
[¨]mo(l)- / moˑl[o]- < **moˑlo- 1* 'roll it up', *2* 'put solids into a fluid' 13, 41
mol 'horse' 45
mol-[¨]Goz- = **mol-[¨]Gos- / mol-Goˑz[o]-* < **mol[o]-koso-* 'cut out' 31
molG- / molo- < **moloG-* < **molok-* 'cut out' 31
molo-/moll- < **molol-* 'get dry'
molW- = **¨molp- / molˑ[¨]W[o]-* < ?**[¨]molpo-* < **moˑloˑpo-* adj 'be heartbreaking/heartbroken' 23
mosum [Ceycwu] 'mind; heart' 67
motoy 'joint' 46
ˑmoyh 'meadow' 107
moyngˑkoˑ(l)- / moyngˑkoˑl[o]- < **moyngˑkoˑlo-* 'make' 73
moyW- = *moyp-/moyW[o]-* < **moypo-* (?< **ˑmoy* = *ˑmay* 'whip' + *-p^{u}⁄o-*) adj 'be intense; be brave, intrepid; be pungent, peppery-hot' 21, 22
¨moyzyang 'always' 53
mozom 'heart' 46, 49, 66, 97

mu-··· 'wh-···' 78
[¨]mu(l)-/mu˙l[u]- < **mu˙lu-* vt 'bite' 12, 41, 76
˙mul 'water' 45, 47
mul˙li- < **mul[u]l-˙i-* 'make/let one retreat or withdraw; delay, postpone' 5
mulli-˙Gwat- 'spurn; repel' 31
mulu-/mull- < **mulul-* 'retreat, withdraw' 5
*munk-/*munu-* 'prolong it' 5
mun-kuu- = *mon-kuzu-* vi 'dawdle, hesitate' 5
munu- 'prolong it' = *mun[u]-* 5
muyW- = *muyp-/muyW[u]-* < **muy-pu-* adj 'be hateful' 21, 22
muz- = *mus-/*muz[u]-* < **musu-* vi 'break, collapse' 27
mwok ?< **mwo˙ko* 'neck' 45
mwolan 'peony' 20, 50
mwo˙lo-/¨mwoll- < **mwo˙lol-* 'not know' 29, 50, 74
˙mwom 'body' 45
mwosi 'ramie cloth' 51
mwosi ˙Gwoy = *mwosi ˙pwoy* 'ramie cloth' 31
¨mwoyh ?< **mwo˙lih* < **mwo˙lwo˙hi* 'mountain' 38
˙mwul 'crowd' 47
(˙)mwus counter for bundles 26
mwusk- vt 'bundle it, make it into a bundle' 26
¨mwuT- = *¨mwut-/mwu˙l[u]-* < **mwu˙tu-* vt 'ask, inquire' 12, 34, 72
[¨]mwuz- = **[¨]mwus-/mwu˙z[u]-* < **mwu˙su-* vt 'put together, build, make' 26
my-ech 'how much/many' 78
˙na 'I' 45
˙nal 'day' 88
nalak 'rice plant' 20
? **nalo-/nalG-* < **nalok-* 'convey' 19
¨nam-/na˙m[o]- < **na˙mo-* vt 'leave it; exceed' 5, 8, 24
*namk-/*namo-* < **namoG-* < **namok-* 'pass over; leave it, let it remain' 6
namko- 'pass over, disregard' 5
na˙poy 'butterfly' 51, 55
¨nat (?= *¨naT* < **na˙tʷo*) 'grain' 20, 37
nath- vi 'appear' 98
¨nayh < **na˙lih* 'stream' 38, 107
¨naz- = *¨nas-/na˙zo-* < **na˙so-* 'advance; get better' 66
na˙zwo- 66
ne 'you' 45
¨nel 'board' 39
¨nem- = *¨nem-/ne˙m[u]-* < **ne˙mu-* vt 'cross, go over; exceed, go beyond' 24
nemk-/nemu- < **nemuG-* < **nemuk-* 'pass over, disregard' 5
nem˙kwʷo- 'pass over, disregard' 5
ne˙mu-* (/na˙mo-*) 82
nep- adj 'be wide/broad' (= *nelu-*) ?< **nelup-* 24, 53
ne˙puy 'width' 52, 55
¨neyh 'four' 39
¨neys 'four' 66
˙ni 'tooth' 70
¨ni(l)-/ni˙l[ʷo]- < **ni˙lʷo-* vi 'arise, get up' 76
nilG-/nilʷo- < **nilʷoG-* < **nilʷok-* vt 'say' 75, 106
nilk- 'read' 106
nilkwup 'seven' 52
nilu-˙Gwat- 'raise' 31
nip- vt 'wear; bear, undergo' 24, 55
ni˙pul 'quilt' 52, 55
-(˙)no- bnd aux (processive) 10
noch ?< **no˙coh* 'face' 45
[¨]no(l)-/no˙l[o]- < **no˙lo-* 'fly' 13, 19, 41
˙no(l)-/˙no˙l[o]- < **˙no˙lo-* 'thread the warp of (a loom)' 41, 42
˙nolh 'warp' 41
no˙li- 'descend' 38
˙no˙li = *no˙li* 'downward' 38
nolo/nolG-··· < **noloG* < **nolok* 'a ferry' 19
noy˙zil 'tomorrow' 53, 66
[¨]nu(l)-/nu˙l[u]- < **nu˙lu-* 'be better; get/be longer' 12, 41

nulk- 'be/get old' 15
nup- [dial.] = *nwup-* 22
**[¨]nuW-* = *nup-* / **nu˙W-* 'lie down' 22, 23
nwoh 'string' 91, 92
? *nwoh* 'oar' 92
nwolo / *nwolG···* < **nwolok* 'roe deer' 54
˙nwom 'fellow' 45
˙nwon 'field' 45
nwoph- adj 'be high or lofty' 98
nwosay 'mule' 52
˙nwu 'who' 44
nwu˙lu- / *¨nwull-* < **nwu˙lul-* vt 'press (down); oppress' 29
˙nwun 'eye' 45
¨nwun 'snow' ?< **nwu˙nV* 40, 45
nwu[˙]pi- 'quilt' 52
nwu˙pi 'quilting' 52
nwu˙pi [˙wos] 'quilted garment' 52
¨nwuT- = *¨nwut-/nwu˙l[u]-* < **nwu˙tu-* vi 'get scorched' 12, 20
nwuW- = *nwup-/nwuW[u]-* (> *nwuwu-*), *nwu[w]-* < **nwupu-* vi 'lie down' 14, 22, 40
¨nwuy < *nwu˙li* 'world; era' 38
nyek ?< **nye˙ku* 'direction' 45
nyemthwong 'heart [the organ]' 67
¨nyey 'the old times' 70
¨nyey s 'of old' 66
(˙)pa ?< **˙pah* 'rope' 91
··· pa˙ci 'a professional' 31
pa˙hwoy 'rock' 36
˙pak 'gourd' 45
pakku- [Ceycwu] vt 'spit out' 99
˙pal 'foot' 16, 45, 96
˙pal 'lines streaks, impressions' < 'foot(print)' 32
[˙]˙palm- / **pal˙m[o]-* < **˙pal˙mo-* vt 'measure it off in spans' 25
˙pam 'night' 45
¨pam 'chestnut' 32, 89
panchywo 'banana plant' 69
pas- vt 'doff' 27
pask ?< **pa˙sok* 'outside' 45
pat-$_1$ 'get' 8, 73, 77
pat-$_2$ 'butt' 31
path-$_1$ vt 'sift, drain; dry up' 98
path-$_2$ vt 'spit out' 99
path ?< **pa˙toh* 'field' 32, 45
˙pcuc- 'tear it' ?< **pu˙cuc-* 27
pel˙Gey 'bug' 49
¨pem 'tiger' 31, 39, 89
penguli-˙Gwat- 'crack/split it' 31
pes- 'remove; doff; shed' 25, 27
?pe˙su- vi 'swarm' 93
?pe˙su(l)-/pe˙su˙l[u]- < **pe˙su˙lu-* 94
pe˙sus 'mushroom' 51, 55, 93
˙pha 'onion' 44
˙phi 'blood' 44
˙pho(l)-/˙pho˙l[o]- < **˙pho˙lo-* vt 'sell' 41, 42, 76
˙phosk = *˙phoch* ?< **poho˙sok* = **poho˙cok* 'red bean' 36, 45
˙phu- 'bloom; spread/extend it' 25, 47
˙phu(l)-/˙phu˙l[u]- < **˙phu˙lu-* 'untie; (dis)solve, clear' 41, 42, 76
˙phwum- 'embrace, clasp to one's bosom' 25, 46
˙phwum 'bosom' 25, 46
˙phwu˙me 25
phwunglywu-Wa˙ci 'musician' 31
˙pi 'rain' 44, 47, 31
˙pich 'light, brilliance; color' (?< **˙pic$^{u}/_{o}$k*) 29, 45
pih- 'sprinkle' 47
¨pi(l)-/pi˙l[$^{u}/_{o}$]- < **pi˙l$^{u}/_{o}$-* 'beg; pray; borrow' 33, 41, 72, 76
pis- vt 'comb (one's hair)' 27
˙pis 'comb' 45
pis˙Gi- = *piz˙Gi-* ?< **pi˙ch[wuy]-˙ki-* 'make/let one embellish (decorate, adorn)' 33
**pisi-* pK 'exist' 83
pit ?< **pi˙t$^{u}/_{o}$* 'price; debt' 45
pizG-/pizu- < **pizuG-* < **pisuk-* vt 'embellish, decorate' 29
po˙li- 'discard' 97
? **po˙l$^{u}/_{o}$-* (lost K verb) 47
polom 'wind' 46
¨polW- = *¨polp-/pol˙Wo-* < ?**pol˙po-* < **po˙lo˙po-* 'tread' 15, 17, 23, 96

ˑpoy 'belly; boat' 43, 44, 47
poy 'pear' 43, 44, 94
ˑpsi 'seed' 108
ˑpsu- vt 70
ˑpsu(l)-/ˑpsuˑl[u]- < **ˑpsuˑlu-* 'sweep' 41, 42
ˑpsulkey 'gall' 52
ˑpsu-ze(l)-/ˑpsu-zel[u]- < **psu[l]-selu-* vt 'sweep up, clean it up' 70
ˑptalki 'strawberry' 52
ˑptelki 'bunch' 52
¨ptelW- = *¨ptelp-/¨ptelˑW[u]-* < ?**¨ptelˑpu-* < **pteˑluˑpu-*< **puˑteˑluˑpu-* 'be puckery/astringent' 23
¨pthelW- = *¨pthelp-/¨pthelˑW[u]-* < ?**¨pthelˑpu-* < **ptheˑluˑpu-* ?< **puˑtheˑluˑpu-* 'be puckery/astringent' 23
ˑpthut- < *puˑthut-* vt 'pluck' 13
¨pti 'wheel' 39
ˑptoy 'dirt' 44
ˑptulh 'garden' 36
ˑptut-$_1$ < **puˑtut-* vt 'bite, snatch, graze' 13
ˑptut-$_2$ < **puˑtut-* vi 'fall, drop' 13
-ˑpʷo- bound adjective 31
[¨]pu(l)-/puˑl[u]- < **puˑlu-* vt 'envy' 12, 41
ˑpul 'fire' 47
pulW- = **¨pulp-/pul[ˑ]W[u]-* < ?**[¨]pulˑpu-* < **puˑluˑpu-* 'be envious, jealous' 23
[¨]pum- = *[¨]pum-/*puˑm[u]-* vi 'relate (to), be relevant (to)' 24
pumˑti 24
puth- 'stick to, adhere; rely on; from' 98; *puˑthe* '(starting) from' 31
puz- = *pus-/puz[u]-* < **pusu-*$_1$ vt 'pour' 26, 40
puz- = *pus-/puz[u]-* < **pusu-*$_2$ vi 'swell' 26, 40, 53
pʷozG-/pozo- < **pʷosʷoG-* < **pʷosʷok-* vt 'crush, smash' 29-30
puzulum 'boil, abscess' 53
ˑpwo- 'see, look (like), seem' 21, 50, 66
pwoh 'cloth for covering/wrapping' 92
pwolˑ]hoy- adj 'pearly grey; misty' 66
ˑpwok of *ˑpoy s ˑpwok* 'navel' 36
ˑpwolam 'sign, indication, mark, symp tom' 50
pwoli 'barley' 94
ˑpwom 'springtime' 45
pwonˑtoy 'originally' 20
¨pwopoy 'treasure' 52
pwosyen 'socks, cotton bootees' 52
¨pwoy- < **pwo-ˑi-* 'get seen' 22
pwuch- 'to fan' 98
¨pwuˑchoy < **pwuˑchi-ˑGoy* 'a fan' 98
pwuhuyye ho- < *pwuˑhuy-* adj 'pearly grey; misty' 66
¨pwu(l)-/pwuˑl[u]- < **pwuˑlu-* 'blow' 41
ˑpwulˑGwep = *ˑpwul ˑpep* 'Buddha's Law' 32
ˑpwuph 'drum' 45
ˑpwut 'brush' 45
¨pwuT- = *¨pwut-/pwuˑl[u]-* < **pwuˑtu-* vi 'swell; increase' 12, 19
ˑpye$_1$ 'rice plant' 44, 108
ˑpye$_2$ 'bone' 74
¨pyel 'star' 39
pyeˑsul 'government post' 52, 53
-s see *-(ʷ)s*
s- see *sʷ-*
s adnominalizing particle 21, 36
s postadnominal 'fact' 36
ˑsa particle 33, 69
¨sa(l)-/saˑl[ʷ]- < **saˑlʷ-* vi 'live' 28, 52
salG-/salo- < **saloG-* < **salo-k-* vt 'let one live' 28
saˑli- = *seˑli-* 'coil [one's body] up, recoil' 110
¨sam- = *¨sam-/saˑm[o]-* < **saˑmo-* vt 'make (it into ···)' 6, 7, 24, 31
saˑpal 'bowl' 52
saˑsom 'deer' 49, 52, 55
saˑWi 'shrimp' 49, 53
¨say$_1$ 'bird' 38
¨say$_2$ 'thatch' 38, 53

"se(l)- / se'l[u]- < **se'lu-* vi 'stay/be unripe or unfamiliar' 50
"se(l)- / se'l[u]- < **se'lu-* vt 'remove, clear, tidy' 31, 70
selec-, selGec- 'remove, tidy it (up); do the dishes' 31
*"sel-'Gwulu- / *-'Gwull-* < **"sel-pulu- /*-pull-* < **se'lu-pulul-* 'be awkward/ clumsy' 50
**selkec-* 31
"seyh 'three' 32, 39
"seys 'three' 66
···'si- see *···('u)'si-*
si- = *is(i)-* 28
'si-'Gwel 'October' 32
"sil 'thread' 39, 45
"sin-/si'n[u]- < **si'nu-* 'wear (footgear)' 5, 8, 25, 81
'sin 'shoe' 5, 25, 45, 81
(s)sip- vt 'bite' 24
siphu- < *sikpu-* aux adjective 'seem; desire' 36
sipu- = *siphu-* < *sikpu-* 36
sis- vt 'wash' 27
"siT- = *"sit- / si'l[u]-* < **si'tu-* vt *1* 'load; record; store', *2* 'get, acquire' (?= *"sit-*), *3* 'worry' (?= *sil-*) 12, 72, 73
sitpu- = *siphu-* < *sikpu-* 36
"skelW- = *"skelp-/"skel'W[u]-* < ?**"skel'pu-* < **ske'lu'pu-* (?< **su'ke'lu'pu-*) 'be difficult' 23
'ski- vi 'form, gather, cover, cloud; settle, cover' 101
s ko'ci 'till, all the way to' 37, 97
'sko(l)- / 'sko'l[o]- < **'sko'lo-* 'spread it out' 41, 42
"skoytoT- = *'skoytot- / 'skoytol[o]-* < **'skoytoto-* (?= **'skoy-toto-*) vi 'wake up, come awake' 12
sku'zi- 'irrigate' 53y
skweng < **sokwen'ko* 'pheasant' 45
'skwu- 'dream' 42, 46
'skwu(l)-/'skwu'l[u]- < **'skwu'lu-* ?< **su'k(w)u'lu-* 'kneel' 41
'skwum 'dream' 46
**'so-* intensive 47
'so(l)- / 'so'l[o]- < **'so'lo-* vt 'burn it; melt it, make it vanish' 41, 42, 76
'solh 'flesh' 45
solk 'leopard cat' < **sol'ko* 45
sol'kwo 'apricot' 49, 52
"solm- / sol'm[o]- < **sol'mo-* 'boil' vt 25
solp-solp 'clear, distinct' 110
"solW- = *"solp-/sol'W[o]-* < ?**sol'po-* < **so'lo'po-* vt 'humbly say, tell to a superior, report, inform' 23, 109, 110
somoch- 'pierce, penetrate' 83, 98
som'ski- = *soms'ki-* 'swallow (up)' 83
-"soW- < **-oso'po-* bound auxiliary (deferential) 34
'soy- 'leak' 14, 24
"soym- (?= *"soym- / *soy'mu-*) < **soy'mu-*) vi 'spring / spurt up' 14, 24
"soym 'source, well-spring' 14, 24
so'zi 'interval' 53
'sp-a bound infinitive 'fall' 47, 102
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'spwop- 'extract, pull out' < **so'pwop-* 24
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'sukoWol 'countryside, district' 53
'su(l)- / 'su'l[u]- < **'su'lu-* 'vanish' 41, 42, 76, 94
sul'Gwu- 'let / make it vanish, get rid of; digest' 76
'su'muy- 'soak / sink in, infiltrate' 82
'sus- vt = *'suc-* 'wipe' 27

**s^{u}/o˙suc-* pK 27
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˙suy- = *˙soy-* 'leak' 82
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¨swok 'deep down/within' 35
¨swol 'brush' 39
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¨swol˙ki 'seam' 52
˙swon 'hand' 43, 44
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˙swuh 'woods, thicket' 92
˙swu(l) 'spoon' 92
˙swum- 'hide oneself, lurk' 25
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swu(˙)(w)ul 'wine' 40
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˙syel˙Gwep 'explaining the Law' 32
¨syelW- = *¨syelp-/¨syel˙W[u]-* < ?**¨syel˙pu-* < **su˙ye˙lu˙pu-* (?< **su˙ye˙lu˙pu-*) adj 'be sad; be sorry; be embarrassed' 23
¨syem 'island' 35, 45
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¨syeWul[h] = *¨syewulh* 'capital city' 53
˙sywo 'ox' 44
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˙tet 'a while' 45
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*[¨]lto(l)-/to˙l[o]- < *to˙lo- 1* 'be sweet', *2* 'weigh it', *3* 'lift it' 13, 41, 75
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˙tolh 'group' 37, 'they/those' 93
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¨two[W]- 'help' 51
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¨twu ˙pol 'two fold' 40
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¨twuyh 'behind; north' 38, 40
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**tyalW-* < **tyelW-* ?< **ty^{e}⁄alopo-* 'be short/fine' 23
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cel 'chopsticks' 92
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ceq-kal(ak) 'chopsticks' 92
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mosi pey 'ramie cloth' 32
mōsyen 'motion' 66
muli 'crowd' 47
mun 'gate, door' 66
m(w)e 'what' 66
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nwūn-pola 'snowstorm' 95
nwun-twupey 53
nwup- [dial.] 'lie down' 14
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pal 'foot' 95
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patol [dial.] 'stone checkers [a game]' 36
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(p)pū.yeh- / (p)pō.yah- 'hazy, dim, blurred; milky-white, pearly' 66
pwok-phan 'the very midst' 36
pwonti 'originally' 20
pwuchi-kay 'a fan' 98
sa [dial.] 33
sākwa 'apple' 52
sali- 'coil [one's body] up, recoil' 111
saypi [dial.] 'shrimp' 49
selkec- 'do the dishes' 31
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sēt-pulu- 'be awkward/clumsy' 50
sī-lang 'jackals and wolves' 107
silkwa 'fruit' 52
si'-o li '15 leagues' 32
siph- 'seem; desire' 36
si'-wel 'October' 32
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ssis- 'wash' 27
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-thong bound noun 'body (part)' 67
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tolk [dial.] 'stone' 36
tōmi 'sea bream' 37
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yekkwayngi [dial.] 'fox' 68
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Index 3: Non-Korean words

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ači Mg 'grandchild'; (Khalkha also 'nephew)' 68
**adulī* pTg 'net' 80
ağrı Tk 'painful; heavy' 110
aji Ma 'first-born' 68
aji-da Ma 'small' 68
aji-gan Ma 'young, small' 68
aji-ge Ma 'small, little' 68
aji(-)gə Ma [Sibe] 'little, small, very young' 68
ajigə-kən Ma [Sibe] 'tiny, wee' 68
aji-gən Ma [Sibe] 'tiny, wee' 68
**ala-* pTg 'make known; know' 75
ala (bol) OTk '(get) ill' 110
am- J < pJ **ama-* 'weave' 80
ami < **am[a-C]i* J 80
amyi-sirwo OJ rebus 'net white' 80
**an* Tk 'understanding' 110
ane J 'older sister' 67
a:ng Tk 110
anga- OTk 'understand' 110
anglağ Tk 'possessing understanding' 110
ani J 'older brother' 67
anik Inuktuk 'brother of a woman' 68
aniki J 'older brother' 68
an-la- Turkish 'understand' 110
anne J dial 'older sister' 67
annya J dial 'older brother' 67
annyo J dial 'older brother' 67
**a(-)ra-* J 'be, exist' 13, 19, 83
arna Evenki 'seaweed; algae' 100
**…(a)-sa-* pJ honorific 6
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aska … Nivkh 'younger … ' 68
askad^{y} Nivkh 'be younger' 68
ask Nivkh 'younger sibling' 68
aski Nivkh 'young' 68
atik Nivkh 'young' 68
az Tk 'small' 68
aziro OJ 'mat; fish-weir' 80, 81
bädük OTk 'big'
báilí Běijīng 'white pear' 94
**bara-* pJ 'split, break' 76
bari- Mg 'take; give, present; pay off, discharge (a debt)' 76
bedun Ma 'big' 19
bele Ma '(hulled) rice' 94
bēléi Cantonese 'white pear' 94
[bem] ? Nanai dialect 'tiger' 88
beri Jurchen 'bow' 95
bi- Ma 'be' 83
bier- Yakut 'give' 76
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bisī Evenki participial 83
bisi-re Ma adnominal 'to be' 83
bi(-)su Ma/Nanai imperative 'be' 83
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**bora-* pJ 'bend, fold, break' 76
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**borV* pA 'foul weather' [Starostin] 95
bu- Ma/Jurchen 'give' 76
bū- Evenki 'give; sell' 76, 98
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budun Dagur 'big' 19
buğday Tk 'wheat' 94
bui/büi written Mg 'be' 83
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bür- Yakut 'wrap up' 98
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burged Khalkha 'eagle' 38
būr-gi- Evenki 'return, repay' 76, 98
burgŏd Monguor 'eagle' 38
**büri-* pA/Mg 'cover, enclose' 98
**būrV(-ga)* pTg 'snowstorm' 95

büt- Tk 'become complete' 98
bute- Dagur 'be achieved, get completed' 98
bute- Tg 'cover' 98
büte- Khalkha 'be achieved, get completed' 98
**büte-* pA 'be completed' 98
butee- Mg 'cover' 98
büten Khalkha < *bütün* 'whole, entire, full' 98
but nerge- Mg 'smash into pieces' 29
büt(ü)- Kalmyck 'cover' 98
butun Evenki 'whole, entire, full' 98
buu Ma imperative 'be' 83
buudai < *ba(g)udai* Mg 'wheat' 94
bu:z- Tk 'destroy' 29
čagna- Khalkha 'listen' 20
čime- Nanai 'ooze, get drenched' 82
čiməl- Tg 'soak, ooze' 82
čingla- Mg < **tīngla-* Mg 'listen' 20
çom- / *çöm-* Tk 'sink; dive' 82
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dabci Middle Mg 'cover' 99
dabta- Ma 'repeat' 99
daha Tk 'more' 99
dahi- Ma 'repeat' 99
dahi Tk 'also, more' 99
dahin Ma 'again' 99
**da(-)k-* pA 'repeat' 99
dakči-(-go-/-kta-) Evenki 'repeat' 99
daki- written Mongolian 'repeat' 99
daki Evenki 'again' 99
**dalī-* pTg 'sweet' 75
dapča- Evenki 'flatten, press; distribute' 99
?**da-s-* pA 'repeat' 99
dasa- Ma 'revise, repair, correct; govern, rule' 99
davta- Mg 'repeat' 99
debsi- Ma 'fan' 98
defeseme- Ma [Sibe] 'fan' 98
defseke < *debsiku* Ma [Sibe] 'a fan' 98
devuur- Mg 'to fan' 98
**dhyeg* OCh 'spoon; key' 92
**dhyok* OCh 'spoon' 92
dhzywong' MCh 'follower, slave' 39
dhzywong MCh 'follow' 39
dobto-ku Ma 'cover' 99
dobton Ma 'book wrapper' 99
dōldī- Tg 'listen' 20
dondi- Jurchen 'listen' 20
donji- Ma 'listen' 20
duula- Mg 'listen' 20
duy- = *t/duy-* Tk 'perceive, notice, hear' 20
dyon Oirot, Yakut 'people' 95
**džak* MCh 'spoon' 92
**džye* MCh 'spoon; key' 92
**e-* pTg 'not' 83
**e-* Uralic / Altaic 'not to be' 83
efule- Ma 'break/destroy it' 29
efuye- Ma 'be broken/destroyed' 29
**ēn-* Tk 'go down' 66
**e-si-* pTg 'not be' 83
**ete-* pTg 'cease' 75
ētər- Tg 'cry, weep' 76
e[y]- J 'get' 13
fak- OJ 'spit (out)' 99
fatarak- OJ 'work' 75
fatas- OJ 'accomplish, fulfill' 75
fate[y]- OJ 'reach the end' 75
feser seme Ma 'broken into small pieces' 29
firu- Ma 'curse; implore, pray' 76
fiy < **pǫ-Ci* OJ 'fire' 47
foode Monguor 'star' 39
fosi OJ 'star' 39
fudur < **furtu* Monguor 78
fuka- OJ 'deep' 35
fusag- J 'stop up, obstruct' 98
fushe- Ma 'fan' 98
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kırg Chukchi 'dry' 78
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**mail, *mais* or **maiš* Kwokwulye 'garlic' 109
mandoon Okinawan 'is / has much' 105
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margi- Mg [written] 'dispute, argue, call in question' 77
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mizu J < *myidu* < pJ **mintu* or < **myin[a]-tu* J 'water' 47
**mk* Chukchi 'numerous' 105
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mongon Tg 'throat, neck' 105
moni Finnish 'many' 59
mori J ?< **mǫri[y]* < pJ **mǫrǫ(-)Ci* 'wooded mountain > woods' 38
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**mürki* pA 'wheat' [Starostin] 37
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**nole* pA 'flame; set on fire' [Starostin] 20
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nǫr- OJ 'ride' 18, 19
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norosi Middle J 'smoke signals' 20
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**ñiāman* pTg 'heart' 67
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ōsīkta Tg 'star' 39
oto J 'sound' 76
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**paka-* pJ 'spit (out)' 99
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**para* pJ 'belly' 47
**p'ārV* pA 'endeavor' [Starostin] 75
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**pata-ra-ka-* pJ 'work' 75
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**p'iägi* pA 'rain' 95
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**pirü(-ge)-* pA 'pray, ask' 76
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**pisa* pJ 'longlasting' 78
**posaka-* pJ 'pray; speak; congratulate; curse' 76

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**puka-* pJ 'deep' 35
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**pukuma-* pJ 'hold in mouth, bear (in mind), comprise, contain' 47, 82
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**puta-na-ka-* pJ 'stop up, obstruct' 98
**puti* pJ 'rim; cliff' 39
**putwo-* pJ 'fat; mighty' 19
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**pwoka-* pJ 'pray' 76
-q Kamchadal adverb designator 79
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sagi J < pJ **sanki* 'heron; magpie' 38
šagna- < **čingna-* Buryat 'listen' 20
saksaha Ma 'magpie' 38
sal- Tk 'throw; let go, ... ' < 'move it, ... ' 76
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sal(a)- Mg 'get detached, part from' 76
sala- Ma 'distribute' 76
sal-g(a)- Mg 'detach, separate; sever, discontinue, divide' 76
sampa Ma 'shrimp' 53
sàn Běijīng 'scatter' 76
**sara-* pJ 'depart' 76
**sara-pa-* pJ 'clean, dredge; snatch away, abduct' 76
**sara-sa-* pJ 'bleach, expose' 76
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se- Ma 'speak, say' 111
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/sey/ "say" English 111
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sigir Tg 'rain with wind storm' 102
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**sīgūr* pA 'a rain/snow storm' 102

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sigure[y]- J < pJ **sinkura-Ci* 102
siγurγan Mg 'snowstorm' 102
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siki-fur- (or *-bur-*?) OJ 102
sikir- J 'continue, be uninterrupted' 102
siki-ri ni J 'frequently' 102
sil- Tk 'rub it, wipe it (clean)' 76
silba- Tg Solon 'teach, name, call' 110
šil[h]u Jurchen 'pear' 52
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šime- Mg 'soak in, be saturated' 82
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simer- J < OJ **simeyr-* < pJ **sima-Ci-ra-* 'get damp' 82
simes- J < OJ **simeys-* < pJ **sima-Ci-sa-* 'dampen/wet it' 82
simi(-t)- Tg 'soak' 82
simi[y]- J < OJ *simey-* < pJ **sima-Ci-* 'permeate, soak' 82
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simo 'frost; cold rain' 103
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sir- J 'know' 110
śır- < **ǰi:r-* Chuvash 'write' 106
**sirä* pTg 'thread' 39
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syulhe Ma [written] 'pear' 52
taas Finnish 'again' 99
tabafu OJ < pJ **tanpa(-)pa-* 'cover' 99
tai J < OJ *tafyi* < pJ **tapi* 'sea bream' 37
takɪ OTk ? 'also, more' 99
tala Chukchi 'trample, kick' 78
tallata Finnish 'step, step on' 78
**tām-* pA 'gather, pack' [Starostin] 82
taman Shuri 'sea bream' 37
**täp* pTg 'cover' (Kim Tongso) 99
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tăr- Chuvash 'stand' 18
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**ta-ra-/-sa-* pJ 'suffice/add' 79
tărri Chuvash 'on top of, above' 18
tas- 'add' J 19, 79
?**ta-s-* pA 'repeat' 99
tat- J 'stand; leave, go away' 18, 78

**tāt-* Tk 'taste; sweet' 75
tavit-/tavič- Evenki 'flatten, press; distribute' 99
tavsag Mg 'chest ... ' 99
täz- Otk 'run' 16
tëe Old Irish 'warm' 82
tege- Tg 'sit; arise' 91
**tepent-s* IE 'warm' 82
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tĭngda- Oirat 'listen' 20
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**tĭng-la-* pA 'listen' 20
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tıt- Chuvash 'seize, hold' 76
tol- OTk 'get full' 19
**tǫra-* pJ 'take; hold' 76
toš- OTk 'fill it' 19
tǫsi J 'year' 35
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*?*turabey-* OJ < pJ **tura-n[a]-pa-Ci-* 'pierce' 109
turanar- J < pJ **tura-na-ra-* 'be linked' 110
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**tute-* pTg 'run' 77
tuti J 'hammer, mallet' 92
tuti J 'earth, dirt' 92
**tutu-Ci* pJ 'hammer, mallet' 92
*?*tutu-Ci* pJ 'earth, dirt' 92
**tū-* pTg 'step on, tread' 77
tut- Tk 'seize, hold' 76
tūt- Tg 'step on, tread' 77
tuy- = *t/ɖuy-* Tk 'perceive, notice, hear' 20
uhila- Ma 'cry, howl' 76
uhun Yakut 'long' 78
üile Mg 'work; affair; crime' 84
ūlta Tg 'echo, sound' 76
ulu- Tk 'howl' 76
uluy Yakut 'howl' 76
ūr Tg 'not long ago, lately, recent' 78
ür Tk 'a long time' 78
ura- Ma 'echo' 76
urä Chukchi 'long'
urt Khalkha 'long (time/space)' 78
usat- < **uzat-* Tk 'pull lengthwise' 78
usiha Ma 'star' 39
usun/uhun Yakut 'long' 78
uyla- Ma 'cry, howl' 76
uza: Tk 'long or long drawn out' 78
uzun OTk 'long' 78
ver- < **bér-* Tk 'give; sell' 76
vərəm < **urun* < **purun* Chuvash 'long' 78
wasi J < pJ **basi* 'eagle' 38
weile Ma / Jurchen 'work; affair; crime' 84
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wi[y]-ru OJ adnominal < pJ **b*$^{u}/_{o}$*-Ci-r* 'to be/stay' 83
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wor- OJ < pJ **wo-ra-* ?<**bora-* 13
(w)ur- J 'sell' 76
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xala- Mg 'change it' 94
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xel Mg 'tongue; language' 75
xeli Dagur 'tongue; language' 75
xereke- Dagur 'cut off' 97

xeseg Khalkha 'part, fragment' 97
xeseg-le- Khalkha vi 'divide' 97
xesehe Dagur 'one part' 97
xiāmi Běijīng 'shrimp' 53
xié Běijīng 'shoes' 81
xode Dagur 'star' 39
xolbo- Mg 'join, tie, unite' 110
xolboo- Yakut 'join, unite' 110
xolobur Yakut 'comparison' 110
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1400+ Kwan-yek = Cosen-kwan yek.e (Cháoxiān-guǎn yìyǔ)

1445 [1]Yongpi echen ka

1446 Hwun = Hwunmin cengum haylyey

1447 Sek = Sekpo sangcel (vol 11: 1447→1495)

1447 or 1448 Tongkwuk cengwun

1449 Kok = Wel.in chenkang ci kok

1459 Wel = Wel.in sekpo

1462 [1]Nung = [1]Nungem kyeng enhay

1463 Pep = Pep-hwa = Myopep [1]yenhwa-kyeng enhay

1463/4 Yeng = [Sencong] Yengka-cip enhay

1465 Wen = Wenkak kyeng enhay

1466 Kup = Kwukup-pang enhay

?1468- Mong = Mongsan hwasang pep.e [1]yaklok enhay

1475 Nay = Nayhwun

1481 Samkang = Samkang hayngsil-to

1481 Twusi = Twusi enhay [cho-kan]

1482 Kum-sam = Kumkang kyeng samka-hay

1482 Nam = [Yengka-taysa cungto-ka] Nammyeng-chen [sensa] kyeysong enhay

1485 Kwan = Kwan.um kyeng enhay

1489 Kup-kan = Kwukup kan.i-pang

1496 [1]Yuk = [1]Yukco [taysa] pep po-tan kyeng enhay

?1517- [1]No = [1]Nokeltay [cho-kan]

?1517- Pak = Pak thongsa enhay [cho-kan]

1518 Ilyun = Ilyun hayngsil-to [cho-kan]

1518 Sohak-cho = Pen.yek Sohak

1527 Cahoy = Hwunmong cahoy

1542 Pun-on = Punmun on.yek ihay-pang

1553 Uncwung = [Pulsel taypo] Pumo uncwung kyeng [enhay]

1576 [1]Yuhap = Sincung [1]Yuhap

1586 Sohak = Sohak enhay

1588 Si-kyeng mulmyeng enhay

1608 Thay-yo = Thaysan cip.yo

1617 Sin-Sok = Tongkwuk Sinsok Samkang hayngsil-to

1632 Kalyey = Kalyey enhay

1649- Makyeng = Makyeng chocip enhay

1677 Pak-cwung = Pak thongsa enhay: cwung-kan

1690 Yek.e = Yek.e [1]yuhay

?1720- Waye = Waye [1]yuhay

1736 E-Nay = Ecey Nayhwun (= Nayhwun: cwung-kan)

1744 Esey Sohak enhay

1773-1837 Mulmyeng-ko

1775 Yek-po = Yek.e [1]yuhay po

?1775 Han-Cheng = Han-Cheng munkam

1776 Nyempul = Nyempul pokwen-mun

1780 Mulpo

1792 Muwen = [Cungswu] Muwen-lok enhay

1795 = 1795←1670 [1]No-cwung = [1]Nokeltay enhay

1800 Hancwung = Hancwung-[man]lok

1876 Kakok wenlyu

1880 Kyengsin = Kyengsin-lok enhay

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